HCD-DX20/RG30

SERVICE MANUAL

Ver 1.3 2003.12

Photo: HCD-DX20

AEP Model
UK Model
HCD-RG30
E Model
HCD-DX20

- HCD-DX20/RG30 is the tuner, deck, CD and amplifier section in MHC-DX20/RG30.

CD Section	Model Name Using Similar Mechanism	HCD-DX30/RG40
	CD Mechanism Type	CDM58B-K6BD38
	Base Unit Name	BU-K6BD38
	Optical Pick-up Name	KSM-213DAP
Tape deck Section	Model Name Using Similar Mechanism	NEW

SPECIFICATIONS

Amplifier section

European models:
HCD-RG30:
DIN power output (rated) 50 + 50 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
60 + 60 watts (6 ohms at 1 kHz, 10% THD)
Music power output (reference)
115 + 115 watts (6 ohms at 1 kHz, 10% THD)

Other models:
HCD-DX20:
The following measured at AC 120, 220, 240 V 50/60 Hz
DIN power output (rated) 50 + 50 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
60 + 60 watts (6 ohms at 1 kHz, 10% THD)
Inputs
MD/VIDEO (AUDIO) IN (phono jacks):
voltage 450/250 mV, impedance 47 kilohms
GAME (AUDIO) IN (phono jacks):
voltage 450 mV, impedance 47 kilohms
MIC (mini jack): sensitivity 1 mV, impedance 10 kilohms
Outputs
PHONES (stereo mini jack):
accepts headphones of 8 ohms or more
SPEAKER: accepts impedance of 6 to 16 ohms

CD player section
System: Compact disc and digital audio system
Laser: Semiconductor laser (λ=780 nm)
Emission duration: continuous
Laser output: Max. 44.6 μW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response: 2 Hz – 20 kHz (±0.5 dB)
Wavelength: 780 – 790 nm
Signal-to-noise ratio: More than 90 dB
Dynamic range: More than 90 dB
CD OPTICAL DIGITAL OUT
(Square optical connector jack, rear panel)
Wavelength: 660 nm
Output Level: –18 dBm

— Continued on next page —

MINI HIFI COMPONENT SYSTEM

9-873-858-14
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

Tape deck section

Recording system	4-track 2-channel stereo
Frequency response	40 – 13,000 Hz (±3 dB), using Sony TYPE I cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	
European and Middle Eastern models:	
	531 – 1,602 kHz (with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz)
	530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

General

Power requirements	
European models:	230 V AC, 50/60 Hz
Mexican models:	120 V AC, 50/60 Hz
Other models:	120 V, 220 V or 230 – 240 V AC, 50/60 Hz
	Adjustable with voltage selector
Power consumption	
European models:	110 watts
	0.5 watts (at the Power Saving Mode)
Other models:	110 watts
Dimensions (w/h/d)	Approx. 280 x 325 x 421 mm
Mass	
European models:	Approx. 8.5 kg
Other models:	Approx. 8.5 kg
Supplied accessories:	AM loop antenna (1)
	Remote Commander (1)
	Batteries (2)
	FM lead antenna (1)
	Front speaker pads (8)

Design and specifications are subject to change without notice.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

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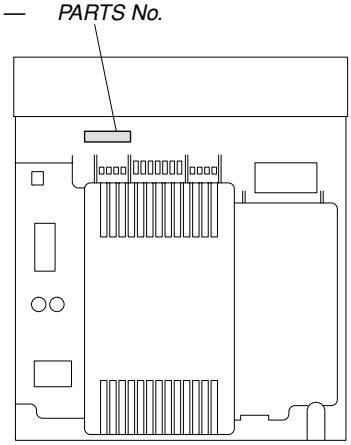
MODEL IDENTIFICATION

— BACK PANEL — PARTS No.



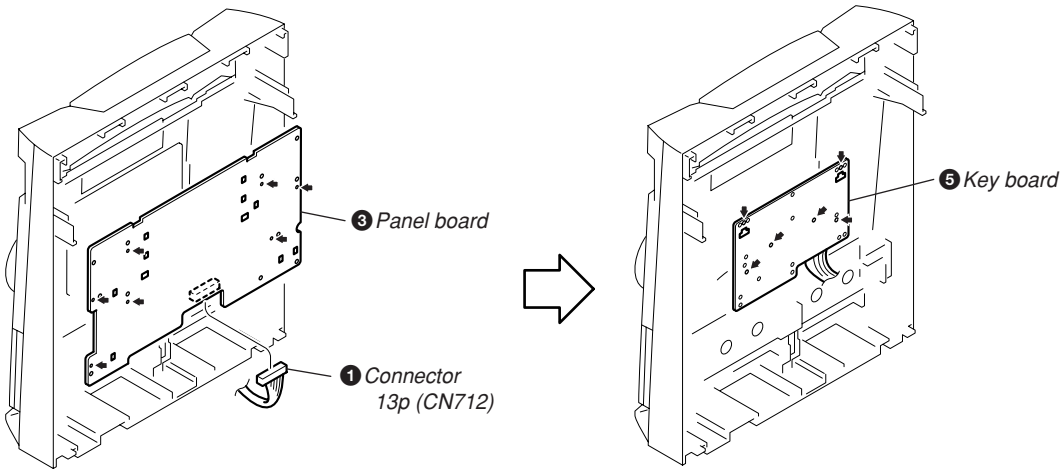
MODEL	PARTS No.
RG30	4-234-032-2☐
DX20: E2, E51, EA, SP, AR models	4-234-091-0☐
DX20: KR, MX, TH models	4-234-091-6☐

- Abbreviation
  - EA : Saudi Arabia model
  - SP : Singapore model
  - TH : Thai model
  - KR : Korea model
  - MX : Mexican model
  - AR : Argentina model
  - E51 : Chiri and Peru model
  - E2 : Central and South America model

SECTION 1
SERVICE NOTE

REMOVING THE PANEL BOARD AND THE KEY BOARD

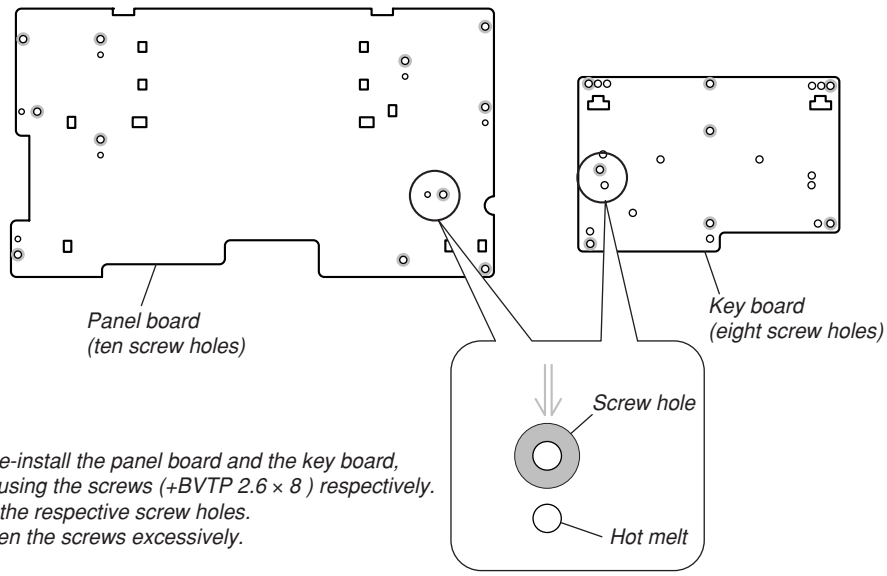
** The panel board and the key board only are connected to the front panel by means of hot-melting the plastics.*



❷ *Cut the seven melted-connection points with a cutting plier.*

❹ *Cut the six melted-connection points with a cutting plier.*

Note for installing the panel board and the key board

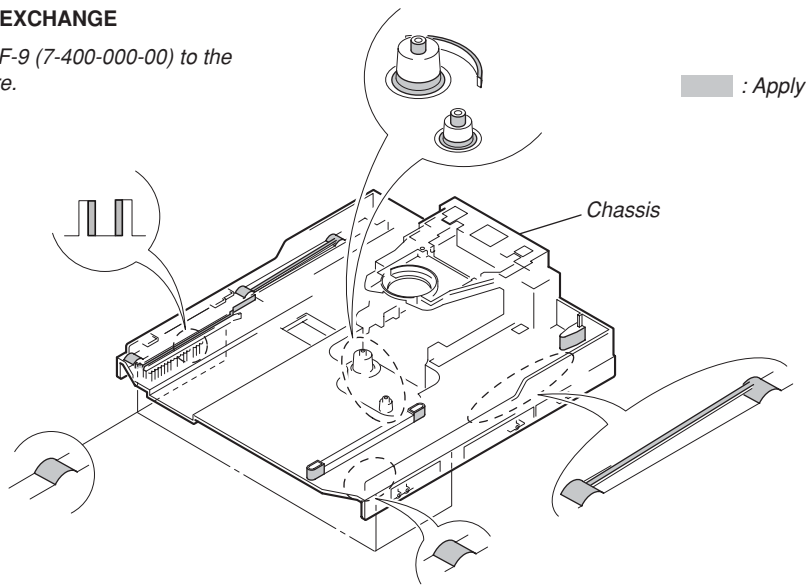


In order to re-install the panel board and the key board, fix them by using the screws (+BVTP 2.6 × 8) respectively. Screw in to the respective screw holes. Do not tighten the screws excessively.

NOTE FOR CHASSIS EXCHANGE

Apply HANARL SLF-9 (7-400-000-00) to the position of the figure.

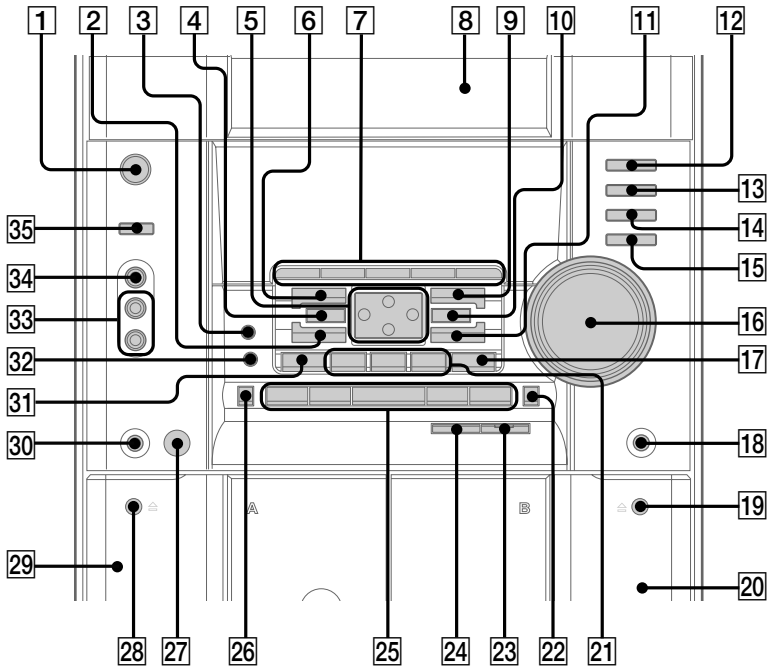
: *Apply HANARL*



SECTION 2
GENERAL

This section is extracted from instruction manual.

Main unit



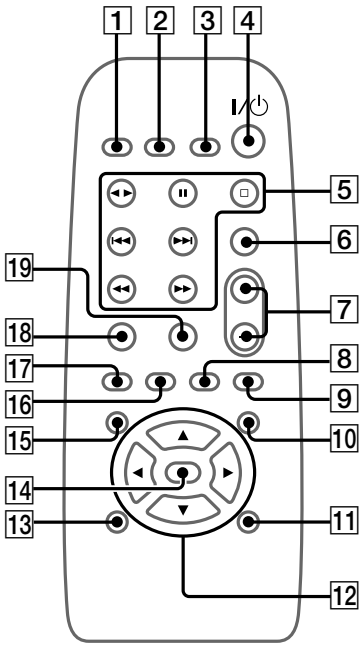
AUDIO jacks 33
CD 12
CD SYNC 24
Deck A 29
Deck B 20
DIRECTION*1 7
DISC 1 – 3 21
DISC SKIP EX-CHANGE 31
Disc tray 8
DISPLAY 7
EDIT 7
EFFECT ON/OFF 4
ENTER 10
GAME 35
GAME EQ 2
GROOVE 3
KARAOKE PON*2 32
MD (VIDEO) 15
MIC jack*2 30
MIC LEVEL control*2 27
MOVIE EQ 9
MUSIC EQ 6
P FILE 11
PHONES jack 18
PLAY MODE 7
PTY/DIRECTION 7
REC PAUSE/START 23
REPEAT 7
SPECTRUM 7
STEREO/MONO 7
TAPE A/B 14
TUNER MEMORY 7
TUNER/BAND 13
VIDEO jack 34
VOLUME control 16

BUTTON DESCRIPTIONS

▲/▼/◄/► 5
⏏ (deck A) 28
⏏ (deck B) 19
►► (fast forward) 22
I◄◄ (go back) 25
⏏ OPEN/CLOSE 17
I/⏻ (power) 1
■ (stop) 25
◄► (play) 25
❚❚ (pause) 25
►►I (go forward) 25
◄◄ (rewind) 26

*1 PTY/DIRECTION for European model
*2 HCD-DX30 only

Remote Control



CD 17
CLEAR 6
CLOCK/TIMER SELECT 2
CLOCK/TIMER SET 3
D.SKIP 19
EFFECT ON/OFF 11
ENTER 14
GAME 18
MD (VIDEO) 9
P FILE 13
PRESET EQ 15
SLEEP 1
SURROUND 10
TAPE A/B 8
TUNER/BAND 16
VOL +/– 7

BUTTON DESCRIPTIONS

▲/▼/◄/► 12
►► (fast forward)/TUNING + 5
I◄◄ (go back)/PRESET – 5
I/⏻ (power) 4
■ (stop) 5
◄► (play) 5
II (pause) 5
►►I (go forward)/PRESET + 5
◄◄ (rewind)/TUNING – 5

Setting the time

1 Turn on the system.

2 Press CLOCK/TIMER SET on the remote.

Proceed to step 5 when "CLOCK" appears in the display.

3 Press ▲ or ▼ repeatedly to select "SET CLOCK".

4 Press ENTER.

5 Press ▲ or ▼ repeatedly to set the hour.

6 Press ►.

The minute indication flashes.

7 Press ▲ or ▼ repeatedly to set the minute.

8 Press ENTER.

Tip

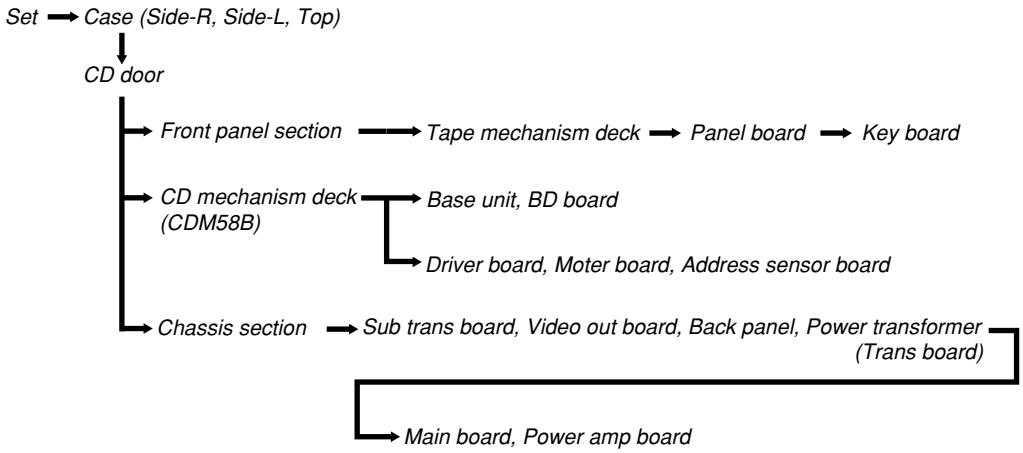
If you made a mistake or want to change the time, start over from step 1.

Note

The clock settings are canceled when you disconnect the power cord or if a power failure occurs.

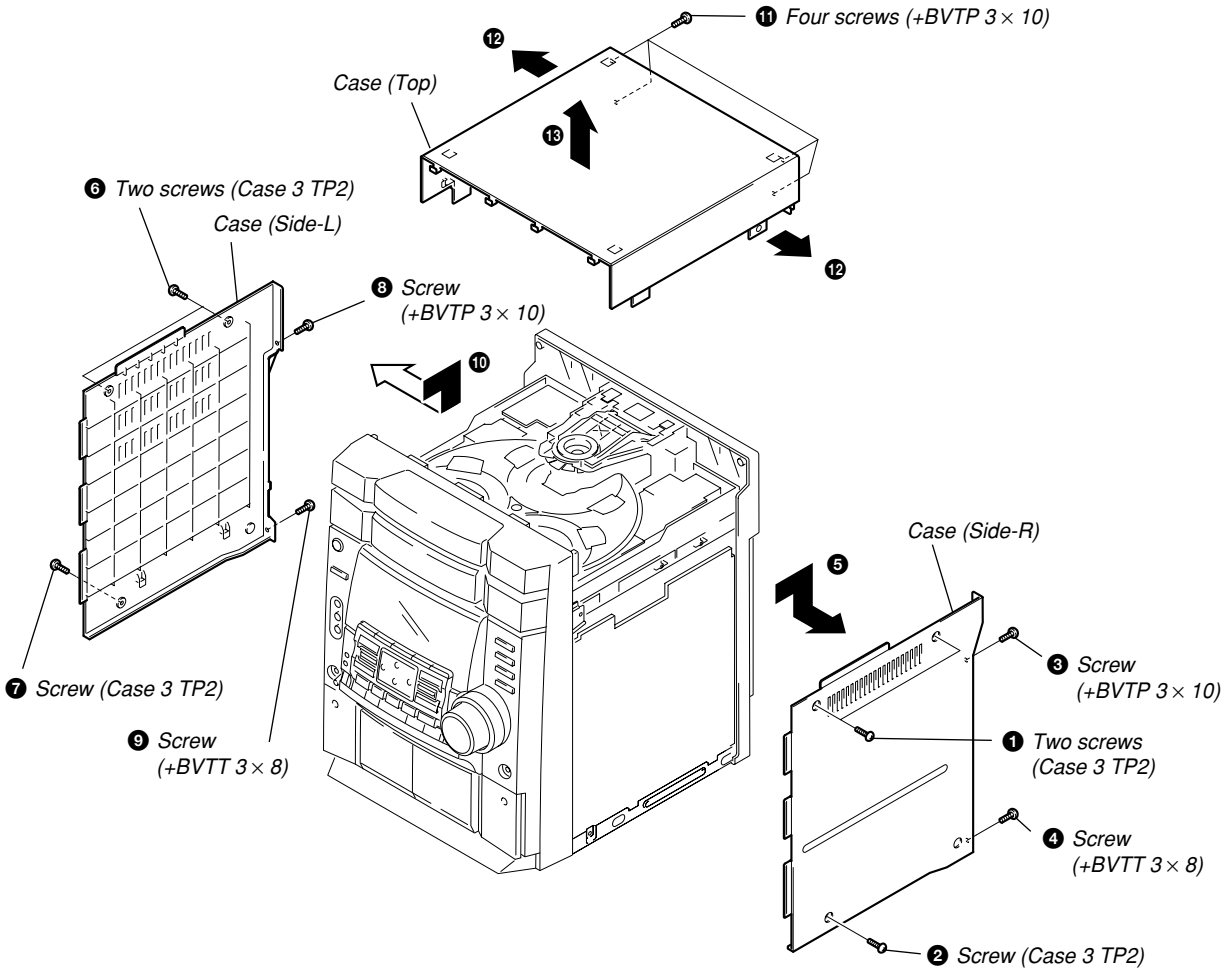
SECTION 3
DISASSEMBLY

Note : Disassemble the unit in the order as shown below.

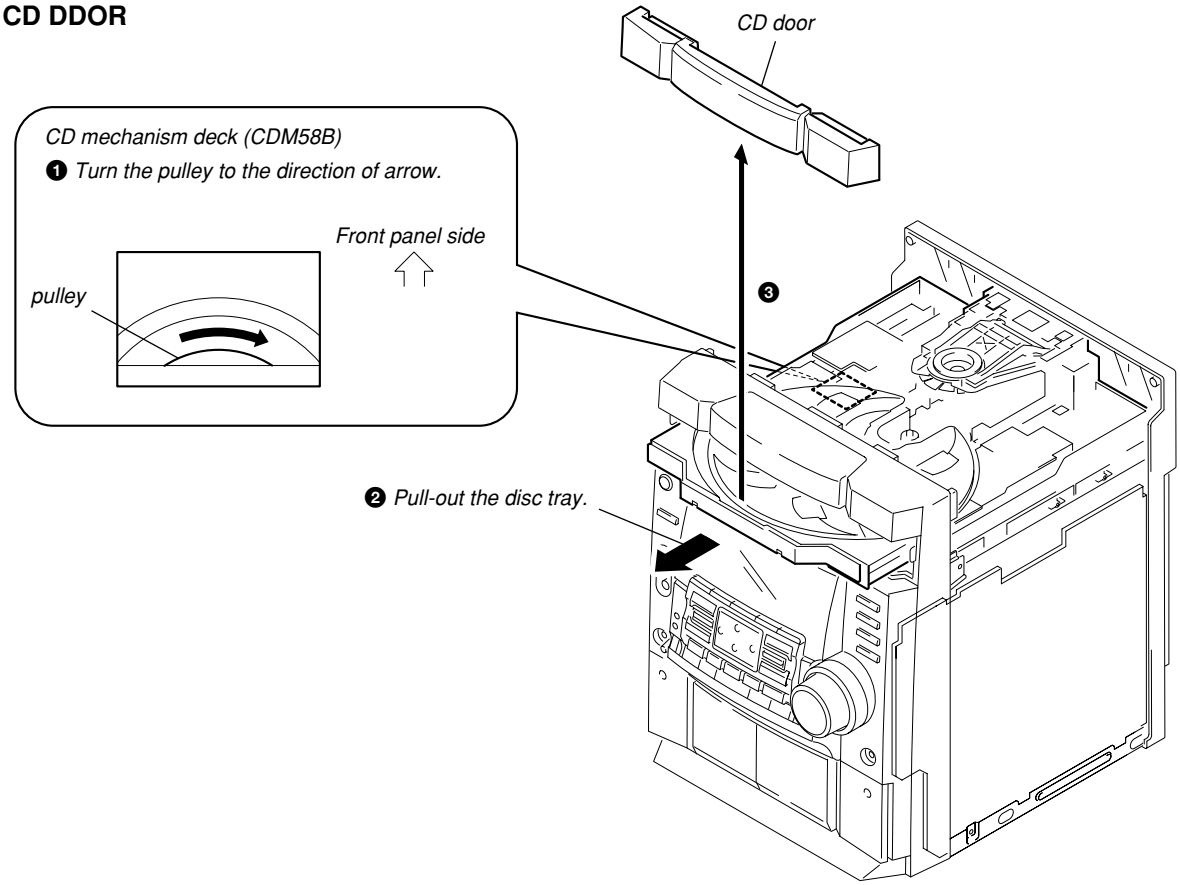


Note : Follow the disassembly procedure in the numerical order given.

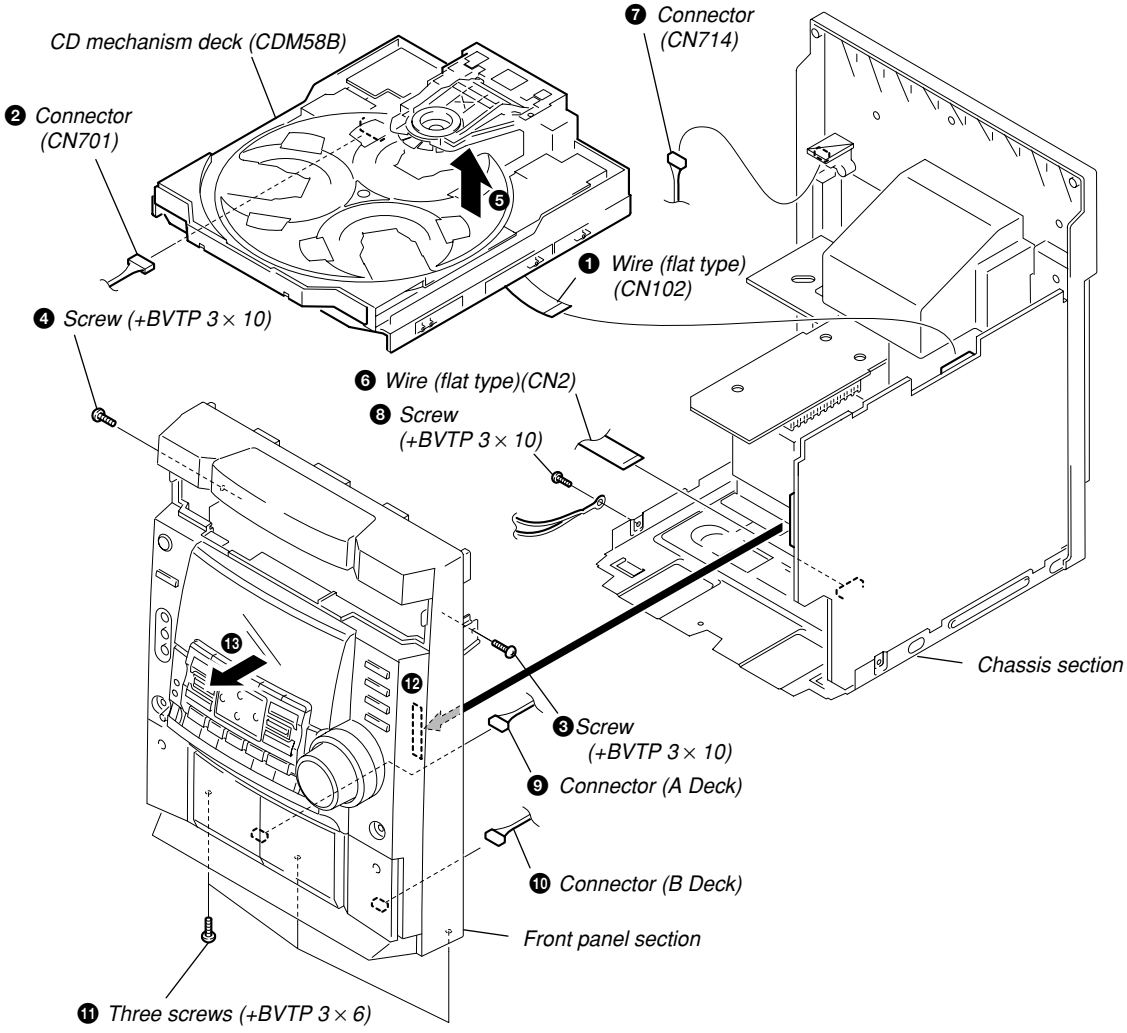
3-1. CASE (SIDE-R, SIDE-L, TOP)



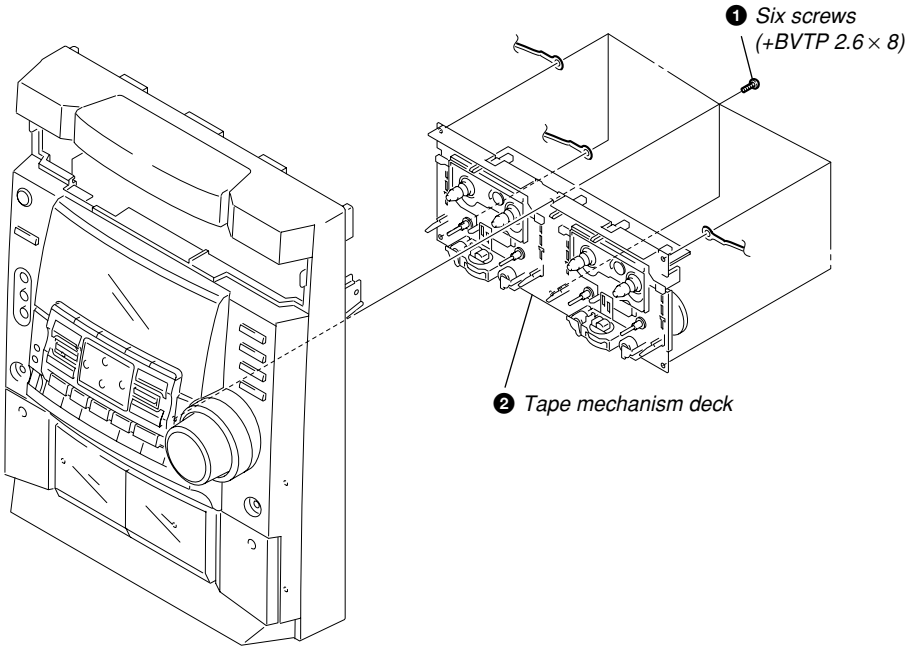
3-2. CD DDOR



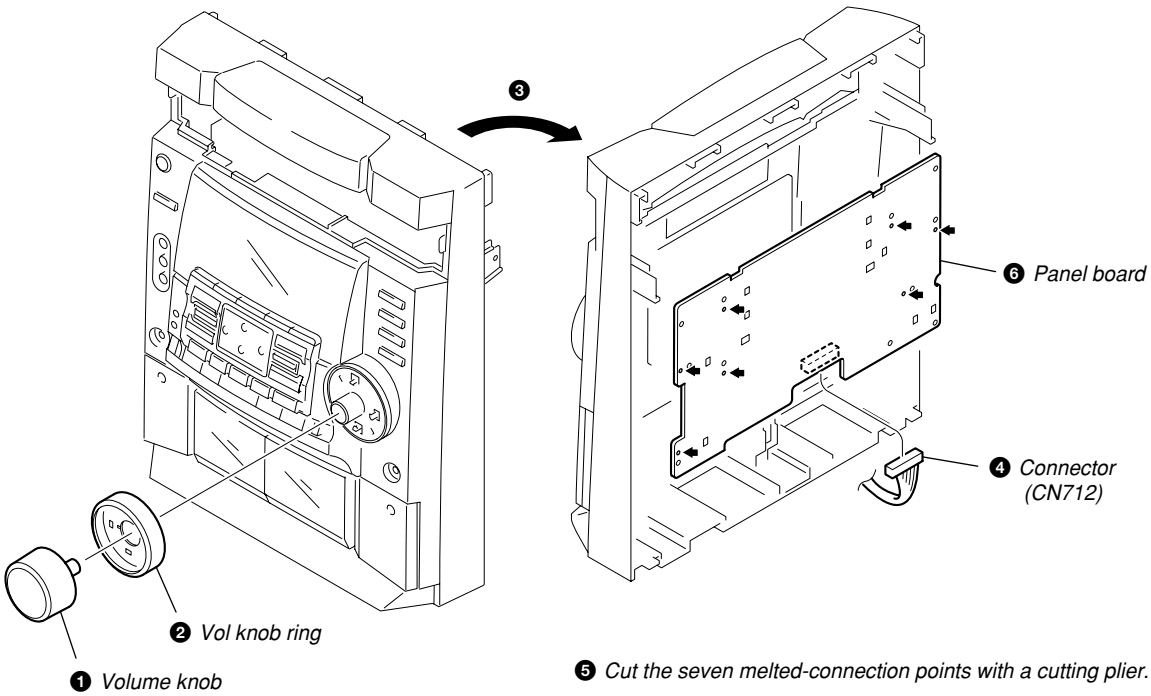
3-3. FRONT PANEL SECTION



3-4. TAPE MECHANISM DECK



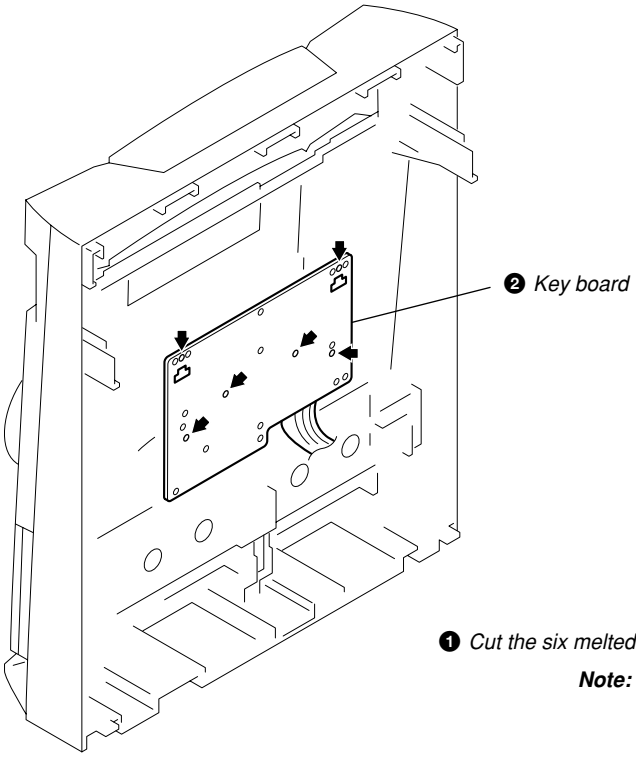
3-5. PANEL BOARD



❺ *Cut the seven melted-connection points with a cutting plier.*

Note: *When attching the panel board, refer to "Service Note" on page 4.*

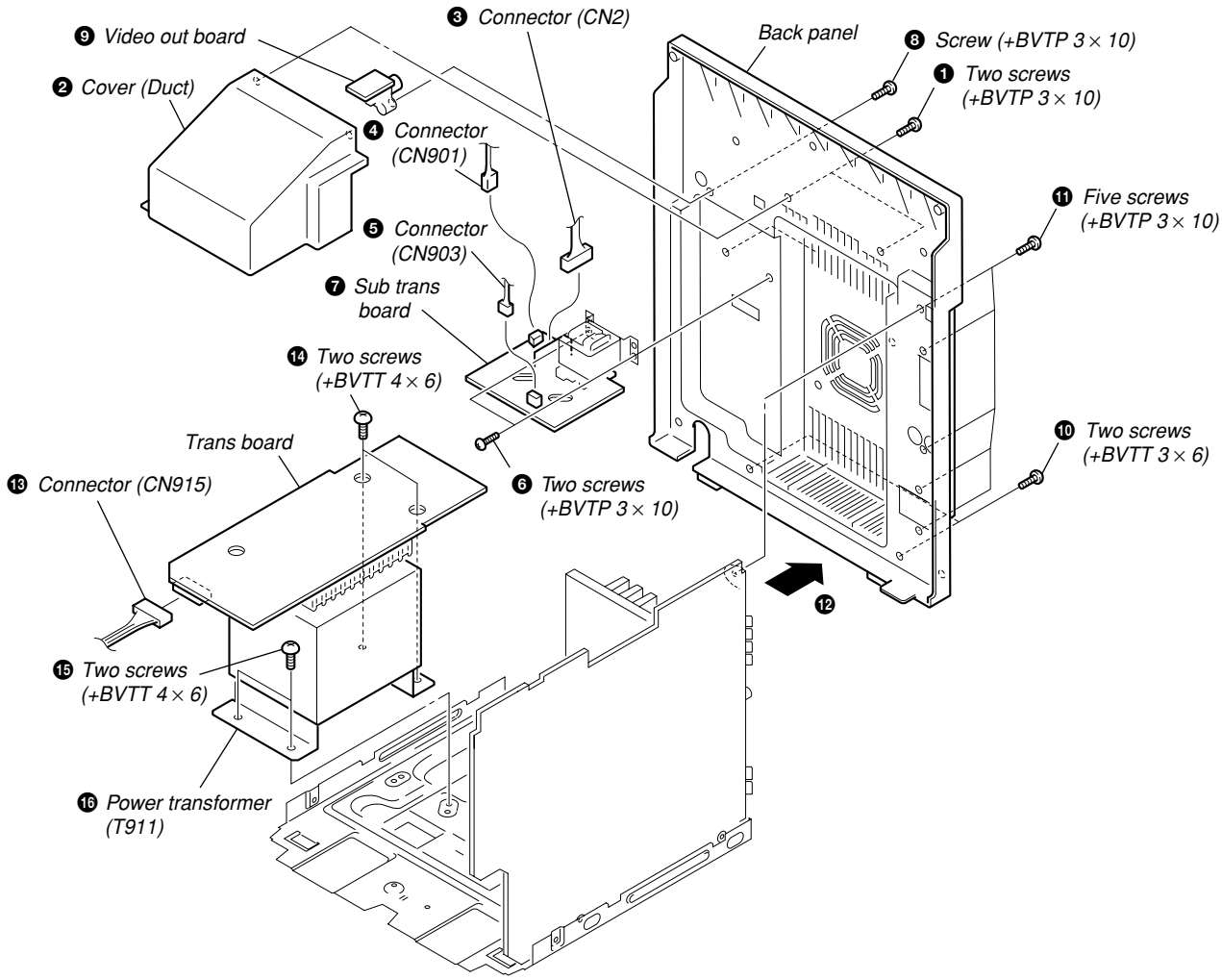
3-6. KEY BOARD



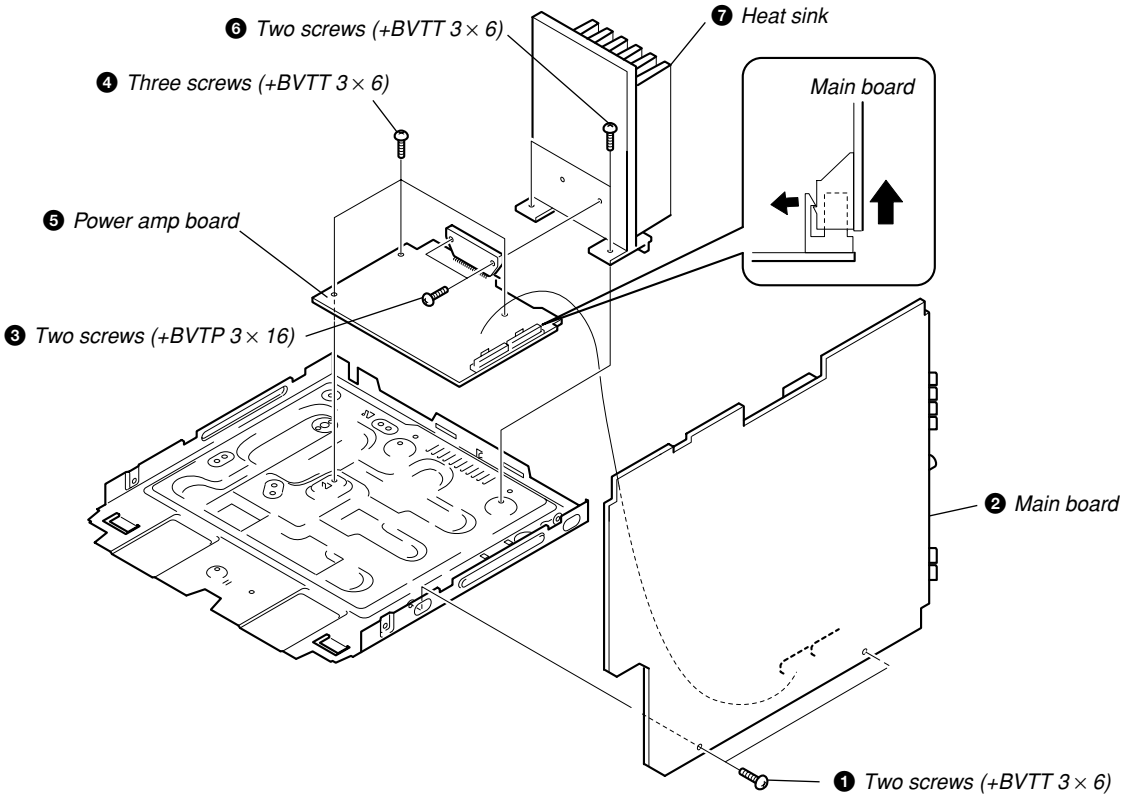
❶ *Cut the six melted-connection points with a cutting plier.*

Note: *When attching the Key board, refer to "Service Note" on page 4.*

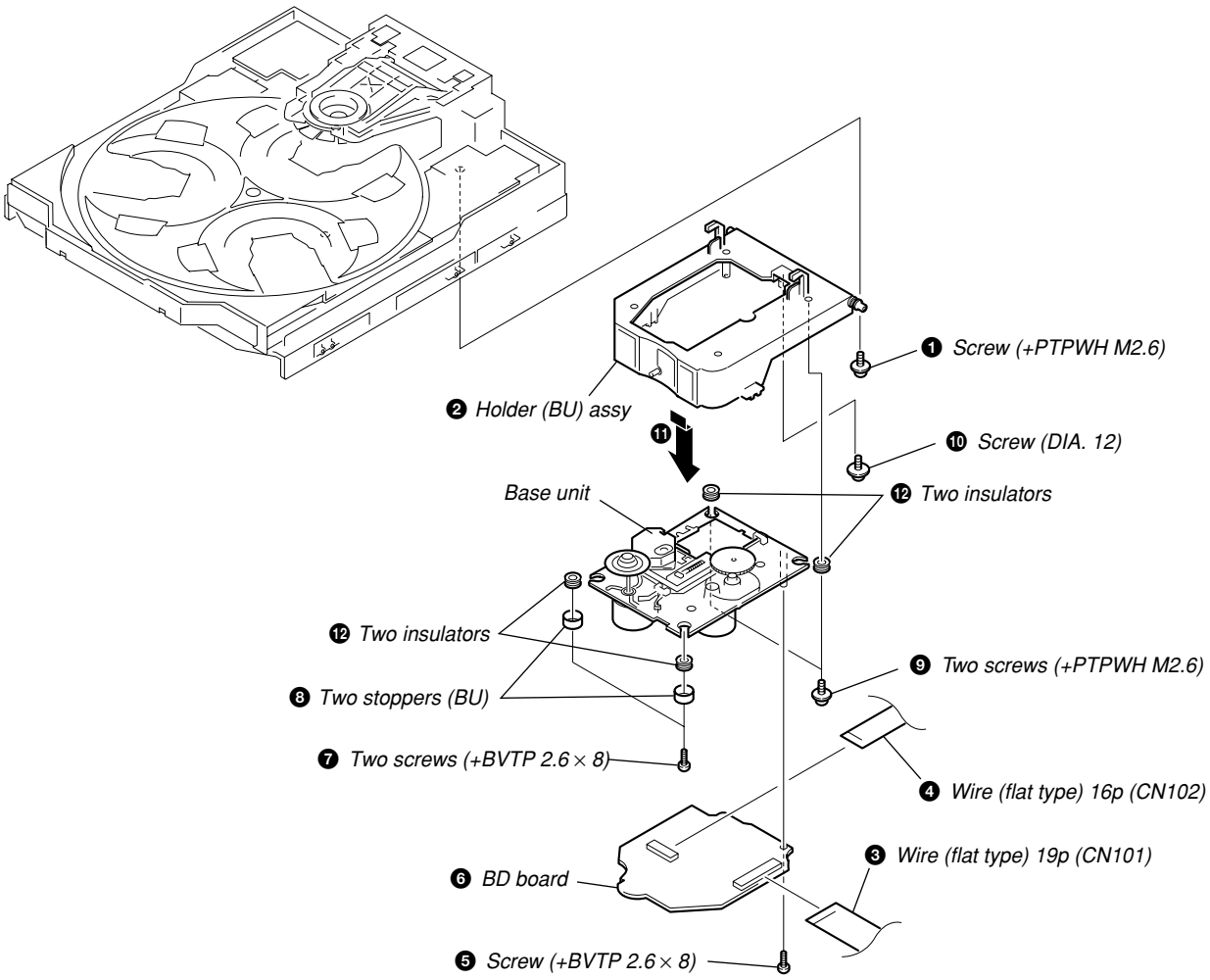
3-7. SUB TRANS BOARD, VIDEO OUT BOARD, BACK PANEL, POWER TRANSFORMER (TRANS BOARD)


❸ Connector (CN2)
❾ Video out board
Back panel
❽ Screw (+BVTP 3× 10)
❷ Cover (Duct)
❶ Two screws (+BVTP 3× 10)
❹ Connector (CN901)
❺ Connector (CN903)
⓫ Five screws (+BVTP 3× 10)
❼ Sub trans board
⓮ Two screws (+BVTT 4× 6)
⓾ Two screws (+BVTT 3× 6)
Trans board
⓭ Connector (CN915)
❻ Two screws (+BVTP 3× 10)
⓬
⓯ Two screws (+BVTT 4× 6)
⓰ Power transformer (T911)

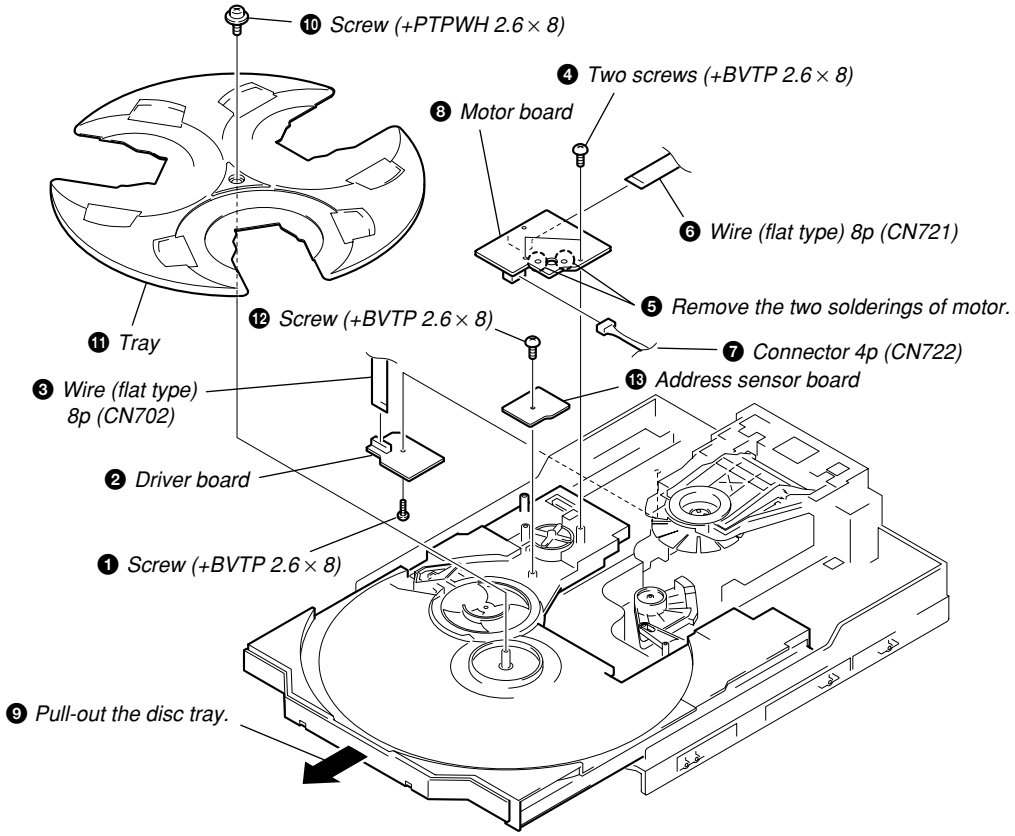
3-8. MAIN BOARD, POWER AMP BOARD


❻ Two screws (+BVTT 3 × 6)
❼ Heat sink
❹ Three screws (+BVTT 3 × 6)
Main board
❺ Power amp board
❸ Two screws (+BVTP 3 × 16)
❷ Main board
❶ Two screws (+BVTT 3 × 6)

3-9. BASE UNIT, BD BOARD


❶ Screw (+PTPWH M2.6)
❷ Holder (BU) assy
⓫
❿ Screw (DIA. 12)
Base unit
⓬ Two insulators
⓬ Two insulators
❾ Two screws (+PTPWH M2.6)
❽ Two stoppers (BU)
❼ Two screws (+BVTP 2.6 × 8)
❹ Wire (flat type) 16p (CN102)
❸ Wire (flat type) 19p (CN101)
❻ BD board
❺ Screw (+BVTP 2.6 × 8)

3-10. DRIVER BOARD, MOTOR BOARD AND ADDRESS SENSOR BOARD


⑩ Screw (+PTPWH 2.6× 8)
❹ Two screws (+BVTP 2.6× 8)
❽ Motor board
❻ Wire (flat type) 8p (CN721)
❺ Remove the two solderings of motor.
⑫ Screw (+BVTP 2.6× 8)
❼ Connector 4p (CN722)
⑪ Tray
⑬ Address sensor board
❸ Wire (flat type) 8p (CN702)
❷ Driver board
❶ Screw (+BVTP 2.6× 8)
❾ Pull-out the disc tray.

SECTION 4
TEST MODE

[MC Cold Reset]

• The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons [■] , [ENTER], and [I/⏻] simultaneously.
2. The fluorescent indicator tube displays "COLD RESET" and the set is reset.

[CD Ship Mode]

• This mode moves the pickup to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Press [CD] button and [I/⏻] button simultaneously until "STANDBY" appears.
3. When you releaset he buttons, a message "LOCK" is displayed on the fluorescent indicator tube, and the CD ship mode is set.

[MC Hot Reset]

• This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure:

1. Press three buttons [■] , [ENTER], and [DISPLAY] simultaneously.
2. The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

[CD Service Mode]

• This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pickup.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function "CD".
3. Press three buttons [■], [ENTER], and [OPEN/CLOSE] simultaneously.
4. The CD service mode is selected.
5. With the CD in stop status, continue to press [▶▶I] to move the pickup to outside track, continue to press [I◀◀] to inside track.
6. To exit from this mode, perform as follows:
   1) Move the pickup to the most inside track.
   2) Press three buttons in the same manner as step 2.

Note: • Always move the pickup to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
• Do not run the sled motor excessively, otherwise the gear can be chipped.

[Change-over of AM Tuner Step between 9 kHz and 10 kHz]

• A step of AM channels can be changed over between 9 kHz and 10 kHz.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function "TUNER", and press [TUNER/BAND] button to select the BAND "AM".
3. Press [I/⏻] button to turn the set OFF.
4. Press [ENTER] and [I/⏻] buttons simultaneously, and the display of fluorescent indicator tube changes to "AM 9 k STEP" or "AM 10 k STEP", and thus the channel step is changed over.

[GC Test Mode]

• This mode is used to check the software version, FL tube, LED, keyboard, headphone and volume.

Procedure:

1. Press three buttons [■] , [ENTER] and [DISC 2] simultaneously.
2. LEDs and fluorescent indicator tube are all turned on.
3. When [ENTER] and [DISC2] are pressed at the same time, the key number check mode starts up. In this mode, the key numbers of each key series are displayed.
4. In the key check mode, the fluorescent indicator tube displays "KEY 000". Each time a button is pressed.
5. When [ENTER] and [DISC2] are pressed at the same time, the key count check mode starts up. In this mode, the message "KEY CNT @@" is displayed on the FL display tube. When each button is pressed, the key row number is incremented first. Then the key value is then incremented. However, one the button is pressed, the key value cannot be counted.
6. When [ENTER] and [DISC2] are pressed at the same time, the headphones check mode starts up. In this mode, the message "H_P ON" is displayed when the headphones are inserted. When the headphones are not inserted. the message "H_P OFF" is displayed.
7. When [ENTER] and [DISC2] are pressed at the same time, the volume check mode starts up. In this mode, the message "VOLUME FLAT" is displayed on the FL display tube. When the volume control knob is rotated in the positive (+) direction, the message "VOLUME UP" is displayed. When the volume control knob is rotated in the negative (-) direction, the message "VOLUME DOWN" is displayed.
8. In order to quit the mode, either press [ENTER] and [DISC2] at the same time or press the three buttons at the same time as in step 1.
9. To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

[MC Test Mode]

• This mode is used to check operations of the respective sections of Amplifier, TUNER, CD and Tape.

Procedure:

1. Press the I/⏻ button to turn on the set.
2. Press the three buttons of ■, ENTER and DISC 3 simultaneously.
3. A message "TEST MODE" appears on the FL display tube.
   • The messages VACS1 to VACS5 are displayed when the VACS is changed in this mode.
   • The number of repeats of TAPE and CD is set to the infinite number as the default setting.

4 When ▲ (CURSOR UP) button is pressed, GEQ increases to its maximum and a message "GEQ MAX" appears.

5. When ▼ (CURSOR DOWN) button is pressed, GEQ decreases to its minimum and a message "GEQ MIN" appears.
6. When ◄ (CURSOR LEFT) or ► (CURSOR RIGHT) button is pressed, GEQ is set to flat and a message "GEQ FLAT" appears.
7. In the test mode, the default-preset channel is called even when the TUNER is selected and an attempt is made to call the preset channel that has been stored in memory, by operating the Shuttle knob. (It means that the memory is cleared.)
8. When a tape is inserted in the Deck B and the TAPE B function is selected, and when the REC PAUSE/START button is pressed twice, recording starts.
   The VIDEO function is selected automatically as the input source.
9. Select the desired loop by pressing the PLAY MODE button in the TAPE B function. Insert a test tape AMS-110A or AMS-RO to Deck A.
10. Press the SPECTRUM button to enter the AMS test mode.
11. After a tape is rewound first, the FF AMS is checked, and the mechanism is shut off after detecting the AMS signal twice.
12. Then the REW AMS is checked and the mechanism is shut off after detecting the AMS signal twice.
13. When the check is complete, a message of either OK or NG appears.
14. When the two buttons of SPECTRUM and DISC1 are pressed at the same time in any function modes, either the "VACS ON" display to enable the VACS function or the "VACS OFF" display to disable the VACS function can be selected.
15. When you want to exit this mode, press the I/⏻ button twice. The cold reset is enforced at the same time.

[Microprocessor version display]

• If the following operation is performed during the POWER OFF in the modes other than the POWER SAVE mode (i.e., while the Demo display shows the watch time),

1. When three buttons of STOP, ENTER, ▼ (CUSOR DOWN) are pressed at the same time, the MC and the GC microprocessor version numbers are displayed as "M1.00 G1.00".
2. When three buttons of STOP, ENTER, ▲ (CUSOR UP) are pressed at the same time, the model name and destination are displayed as "BG1 AS1A3".

[Aging Mode]

This mode can be used for operation check of CD section and tape deck section.

- If an error occurred:
  The aging operation stops and display status.
- If no error occurs:
  The aging operation continues repeatedly.

1. Operating method of Aging Mode

Turn on the main power and select "CD" of the function.

1) Set a disc in DISC1 tray. Select ALL DISC CONTINUE, and REPEAT OFF.
2) Load the tapes recording use into the decks A and B respectively.
3) Press three buttons ■ , ENTER , and DISC SKIP EX-CHANGE simultaneously.
4) Aging operations of CD and tape are started at the same time.
5) To exit the aging mode, perform [MC Cold Reset].

3. Aging Mode in CD section

1) Display state

- No error occurs

Display

AGING✳✳✳✳

Note:

✳✳✳✳ : Number of aging operations

Error display

E ✳✳ □ ## $$ ⁒

① ② ③ ④ ⑤

① ✳✳	The error No. 00 indicates the newest error. As the error No. increases, it means the older error. When you want to retrieve the error history, press the PLAY MODE button in the case of mechanism error. Or press the REPEAT button in the case of NO DISC error.	
② □	M: Mechanism error	D: No disc error
③ ##	Don't care	01: FOCUS ERROR 02: GFS ERROR 03: SETUP ERROR
④ $$	High order digits only D: Stopped during closing due to problems other than mechanism. E: Stopped during opening due to problems other than mechanism. C: Stopped during chucking due to problems other than mechanism. F: Stopped during EX-opening due to problems other than mechanism.	01: NO DISC judgment without chucking retry 02: NO DISC judgment after chucking retry
⑤ ⁒	Emergency related errors (High order digits only) 1: Stopped during chuck-up 2: Stopped during chuck-down 3: Time out by EX-OPEN 5: Time out by EX-CLOSE	Status at the time of NO DISC judgment (High order digits only) 1: STOP 2: SETUP 3: TOC READ 4: ACCESS 5: PLAY BACK 6: PAUSE 7: MANUAL SEARCH (PLAY) 8: MANUAL SEARCH (PAUSE)

- When the buttons ■ , ENTER and DISC 1 are pressed simultaneously, number of time of the mechanism error and the NO DISC error can be checked.
  Display: EMC✳✳EDC✳✳ ✳✳: Number of times of error (Maximum three times)
  EMC: Mechanism error
  EDC: NO DISC error

- When aging operation is complete, be sure to perform the MC Cold Reset to reset the error history.

2) Operation during aging mode
In the aging mode, the program is executed in the following sequence.
(1) The disc tray opens and closes.
(2) The mechanism accesses DISC 2 and makes an attempt to read TOC. However, since there are no discs, a message "CD2 NO DISC" appears.
(3) The mechanism accesses DISC 3 and a message "CD3 NO DISC" appears.
(4) The disc tray turns to select a disc1.
(5) A disc is chucked.
(6) TOC of disc is read.
(7) The pickup accesses to the track 1, and playing 2 seconds.
(8) The pickup accesses to the last track, and playing 2 seconds.
(9) Every time when an aging operation of step 1 to step 8 is complete, the display "AGING[*][*][*][*]" value increases as the number of aging operations is counted up.
(10) Returns to step 1.

3. Aging Mode in Tape Deck section
1) Display state
• No error occurs
Display action now
• Error occurred
Display action last time

NO.	Display action	Action contents	Final timing
1	TAPE A AG-6 TAPE B AG-1	Rewind the TAPE A Rewind the TAPE B	The top of tape
2	TAPE A AG-2	FWD play the TAPE A	2 minutes playing
3	TAPE A AG-3	F.F. the TAPE A	20 second FF or the end of tape
4	TAPE A AG-4	REV play the TAPE A	2 minutes playing
5	TAPE A AG-5	Rewind the TAPE A	The top of tape
6	TAPE B AG-2	FWD play the TAPE B	2 minutes playing
7	TAPE B AG-3	F.F. the TAPE B	20 second FF or the end of tape
8	TAPE B AG-4	REV play the TAPE B	2 minutes playing
9	TAPE B AG-5	Rewind the TAPE B	The top of tape

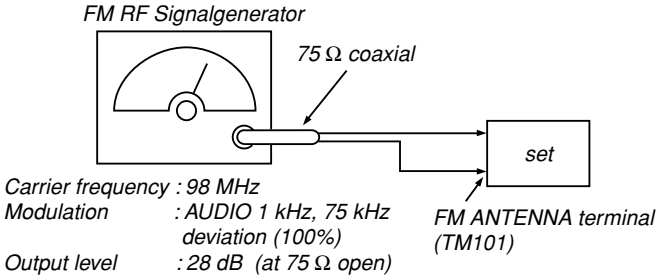
2) Operation during aging mode
In the aging mode, the program is executed in the following sequence.
(1) Rewind is executed up to the top of tape A and B.
(2) A tape on FWD side is played for 2 minutes.
(3) FF is executed up to either made for 20 second or the end of tape.
(4) B tape is reversed, and the tape on REV side is played for 2 minutes.
(5) Rewind is executed up to the top of tape.
(6) Returns to step 2, and repeat steps from 2 to 5.

[Function Change Mode]
* elect either VIDEO or MD of the external FUNCTION input.

Procedure:
1. Turn on the power.
2. Press the two buttons [MD (VIDEO)] and [I/⏻] at the same time.
The main power is turned on and the other function of the previous function is selected and displayed. "MD" or "VIDEO".

SECTION 5
ELECTRICAL ADJUSTMENTS

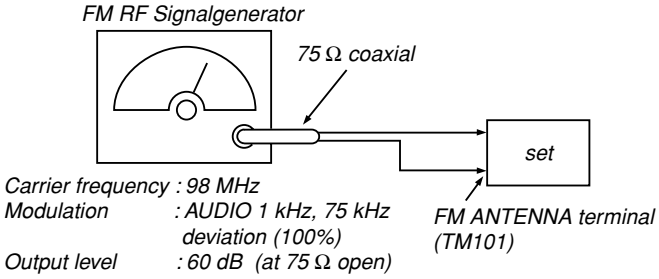
FM Tuned Level Adjustment


FM RF Signalgenerator
75 Ω coaxial
set
FM ANTENNA terminal
(TM101)
Carrier frequency : 98 MHz
Modulation : AUDIO 1 kHz, 75 kHz deviation (100%)
Output level : 28 dB (at 75 Ω open)

Procedure:
1. Supply a 98 MHz signal at 28 dB from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV101 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: MAIN board

Null Adjustment

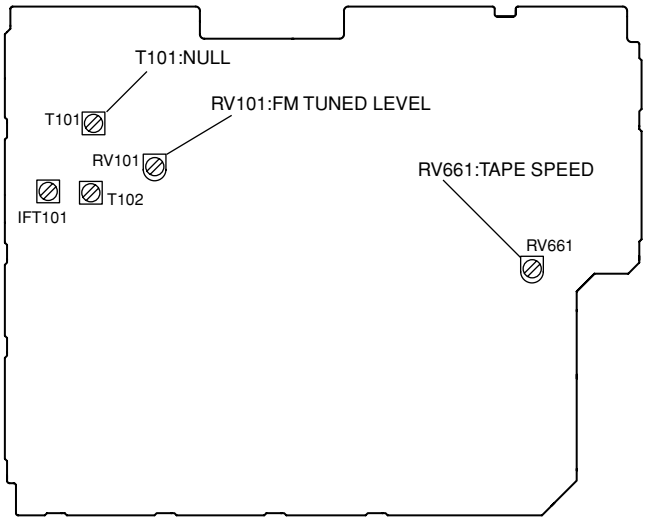

FM RF Signalgenerator
75 Ω coaxial
set
FM ANTENNA terminal
(TM101)
Carrier frequency : 98 MHz
Modulation : AUDIO 1 kHz, 75 kHz deviation (100%)
Output level : 60 dB (at 75 Ω open)

Procedure:
1. Supply a 98 MHz signal at 60 dB from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Measure voltage between pin 21 and pin 23 of IC 101. Adjust T101 ubtil the voltage becomes 0 V.

Adjustment Location: MAIN board

Adjustment Location

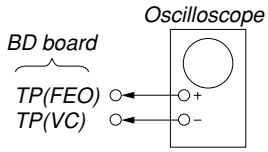
[MAIN BOARD] Component side



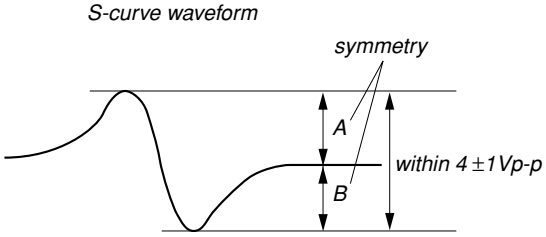
CD SECTION

Note :
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



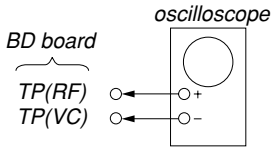
Procedure :
1. Connect oscilloscope to TP (FEO).
2. Connect between TP (FEI) and TP (VC) by lead wire.
3. Connect between TP (AGCCON) and TP (D GND) by lead wire.
4. Turn Power switch on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 4 ±1 Vp-p.



7. After check, remove the lead wire connected in step 2 and 3.

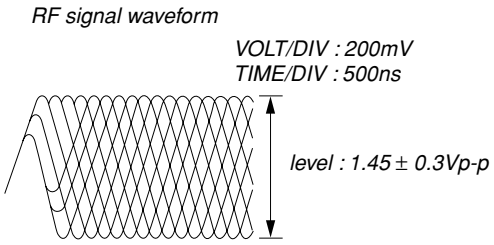
Note :
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

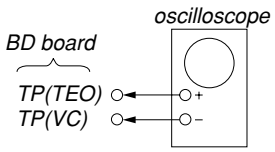


Procedure :
1. Connect oscilloscope to TP (RF).
2. Connect between TP (AGCCON) and TP (D GND) by lead wire.
3. Turned Power switch on.
4. Load a disc (YEDS-18) and playback.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note : Clear RF signal waveform means that the shape " ◊ " can be clearly distinguished at the center of the waveform.

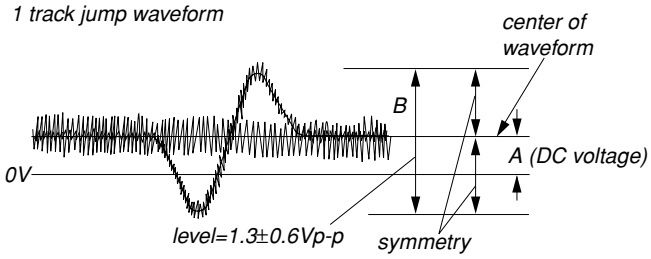


E-F Balance (1 Track jump) Check



Procedure :

1. Connect oscilloscope to TP (TEO) and TP (VC).
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the ◁▷ button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.



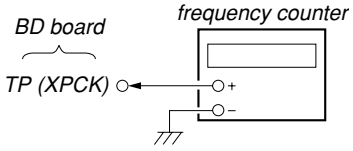
Specified level: $\frac{A}{B} \times 100$=less than ±22%

6. After check, remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

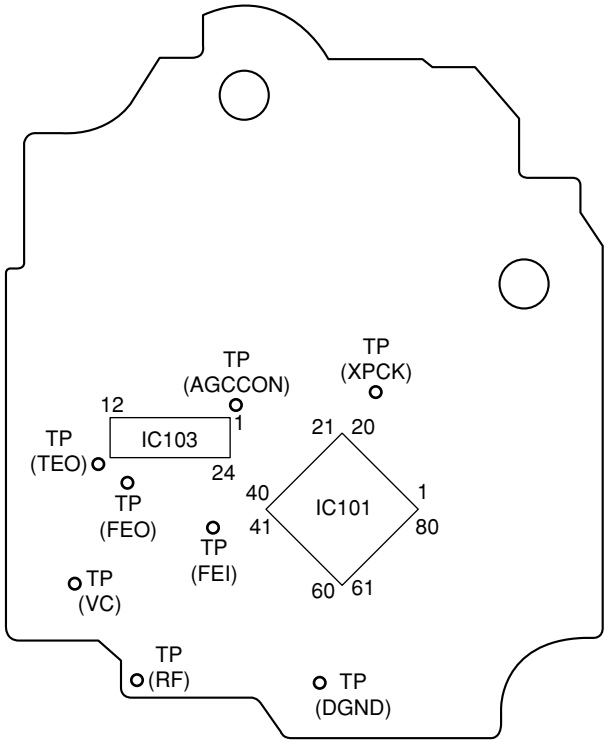
1. Connect frequency counter to test point (XPCK) with lead wire.



2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location:

[BD BOARD] (Conductor Side)



SECTION 6
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note on Schematic Diagram:

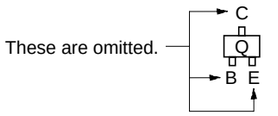
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

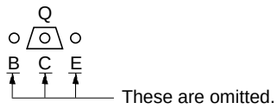
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line.
- ▬ ▬ : B– Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
  no mark : FM
  ( ) : CD
  [ ] : TAPE
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM
  : PB (DECK A)
  : PB (DECK B)
  : REC (DECK B)
  : CD
  : digital out
- Abbreviation
  SP : Singapore model
  KR : Korea model
  MX : Mexican model
  AR : Argentina model
  TH : Thai model
  EA : Saudi Arabia model
  E51 : Chiri and Peru model
  E2 : Central and Aouth model

Note on Printed Wiring Boards:

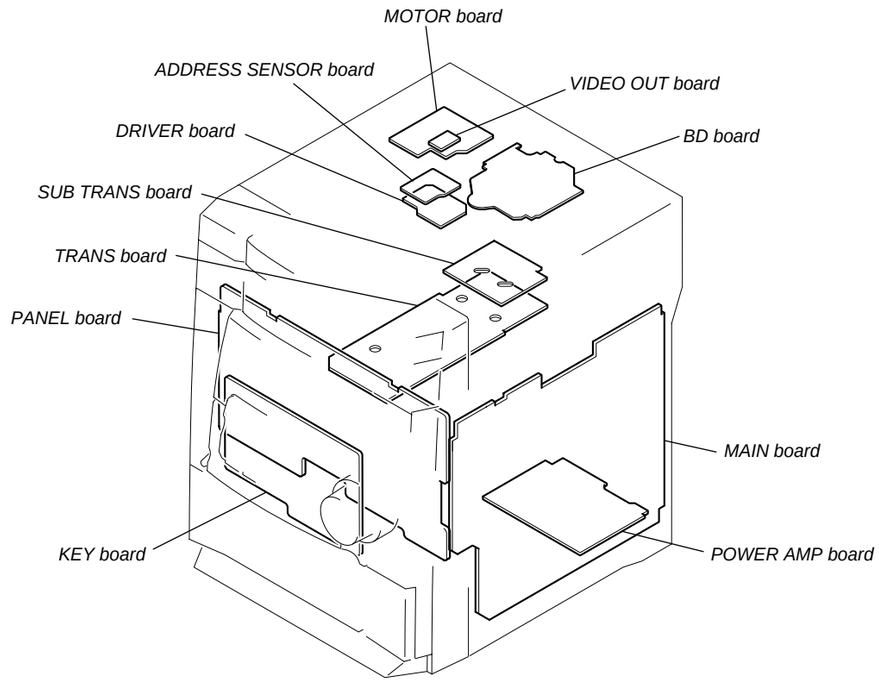
- o——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.
- Indication of transistor.





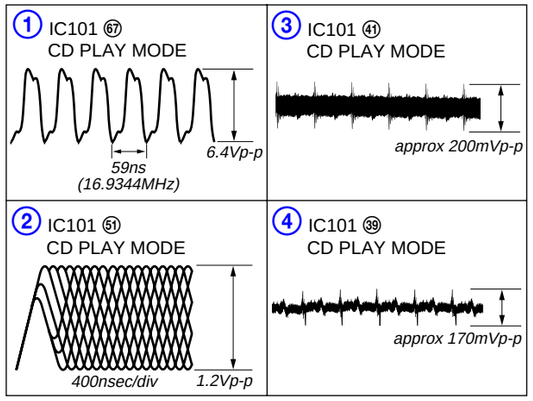
- Abbreviation
  SP : Singapore model
  KR : Korea model
  MX : Mexican model
  AR : Argentina model
  TH : Thai model
  EA : Saudi Arabia model
  E51 : Chiri and Peru model
  E2 : Central and Aouth model

6-1. CIRCUIT BOARD LOCATION

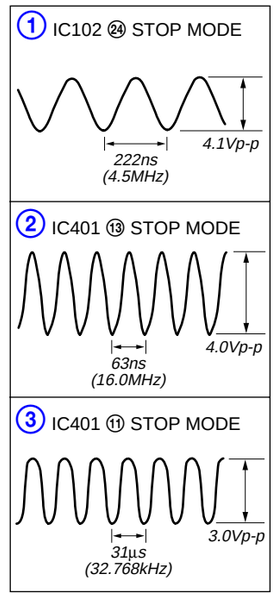


• WAVEFORMS

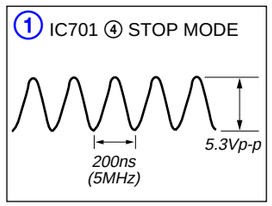
– BD BOARD –



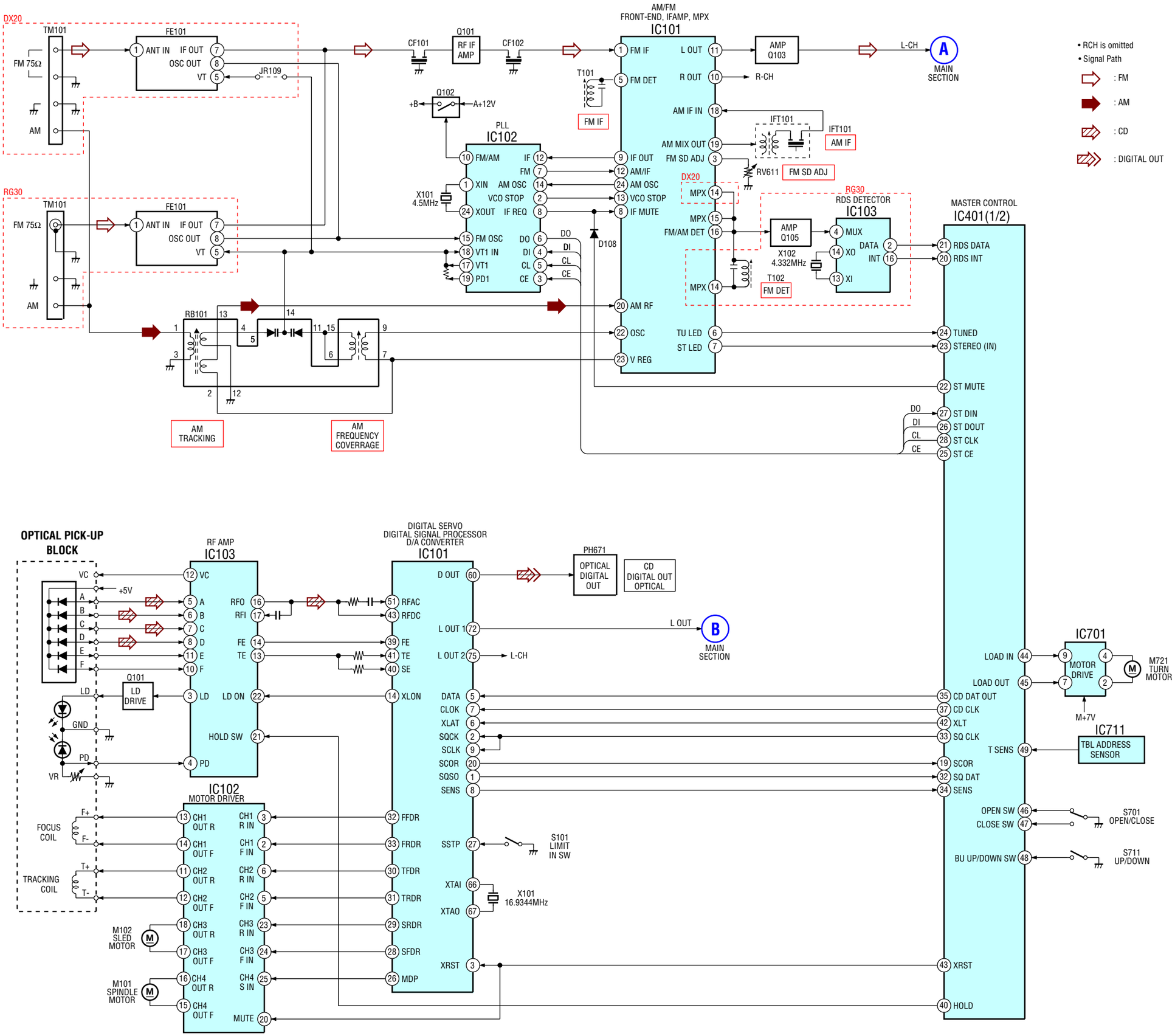
– MAIN BOARD –



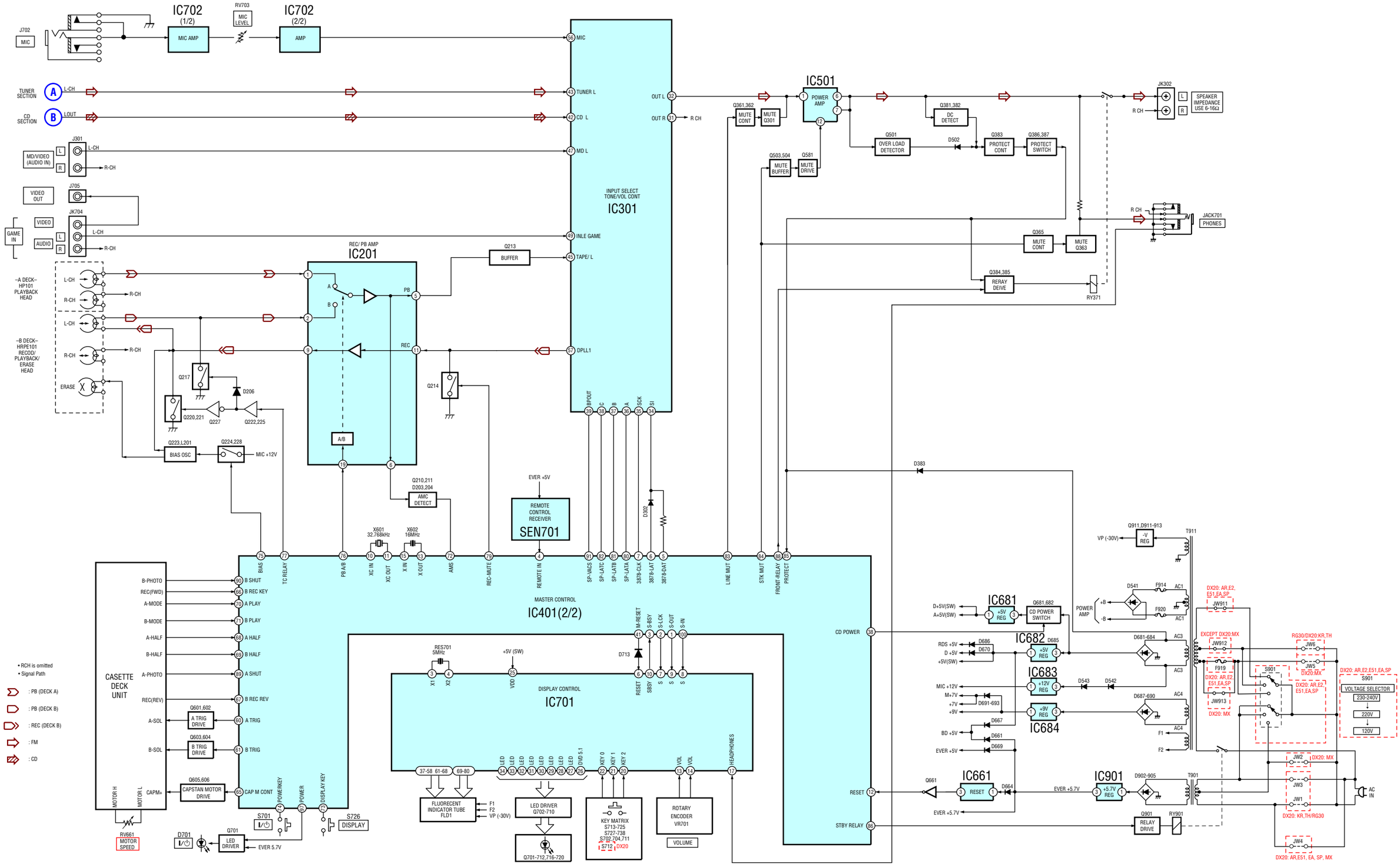
– PANEL BOARD –



6-2. BLOCK DIAGRAMS
TUNER SECTION



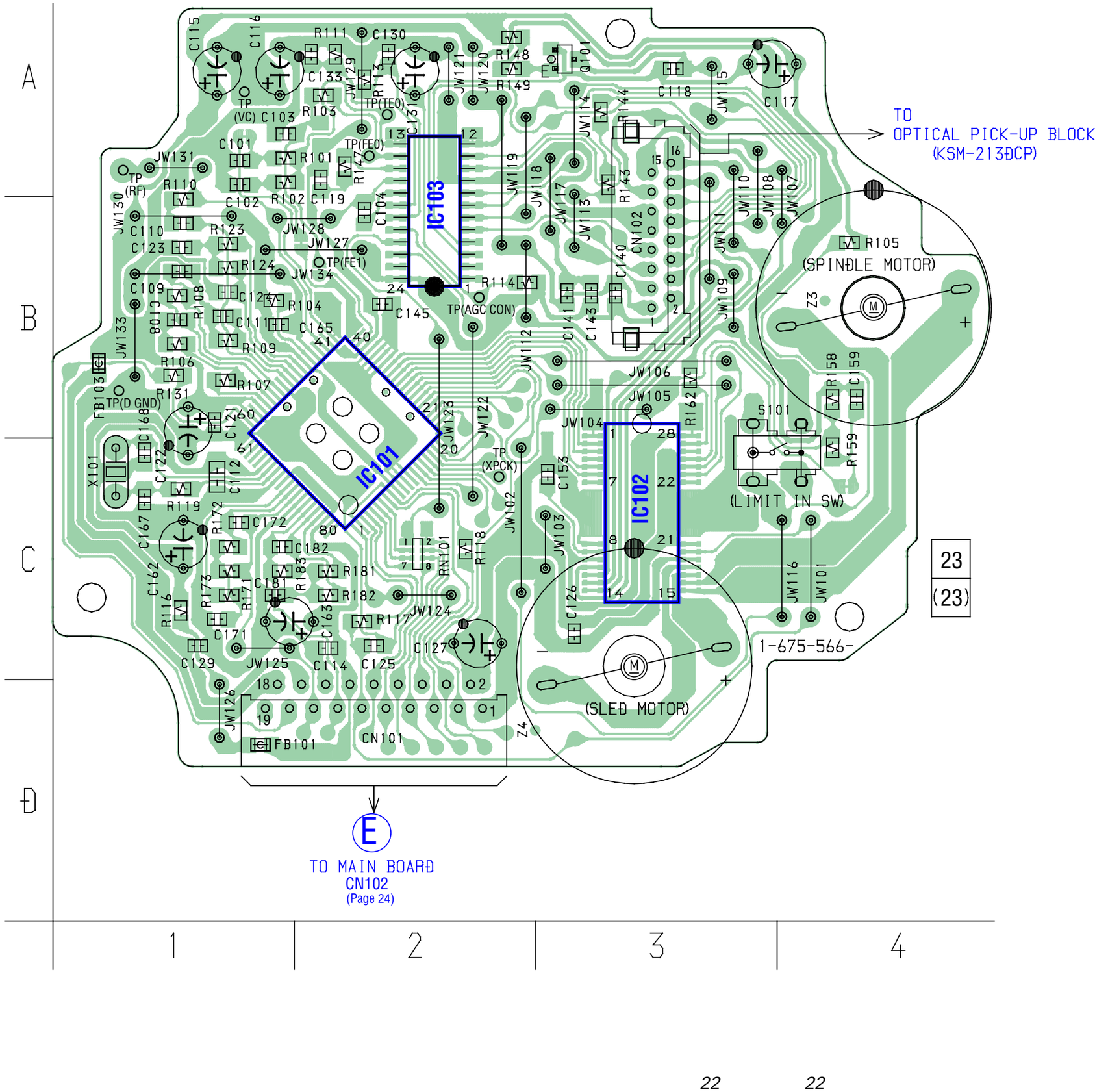
MAIN SECTION



6-3. PRINTED WIRING BOARD – BD SECTION –

• See page 19 for Circuit Boards Location.

【BD BOARD】

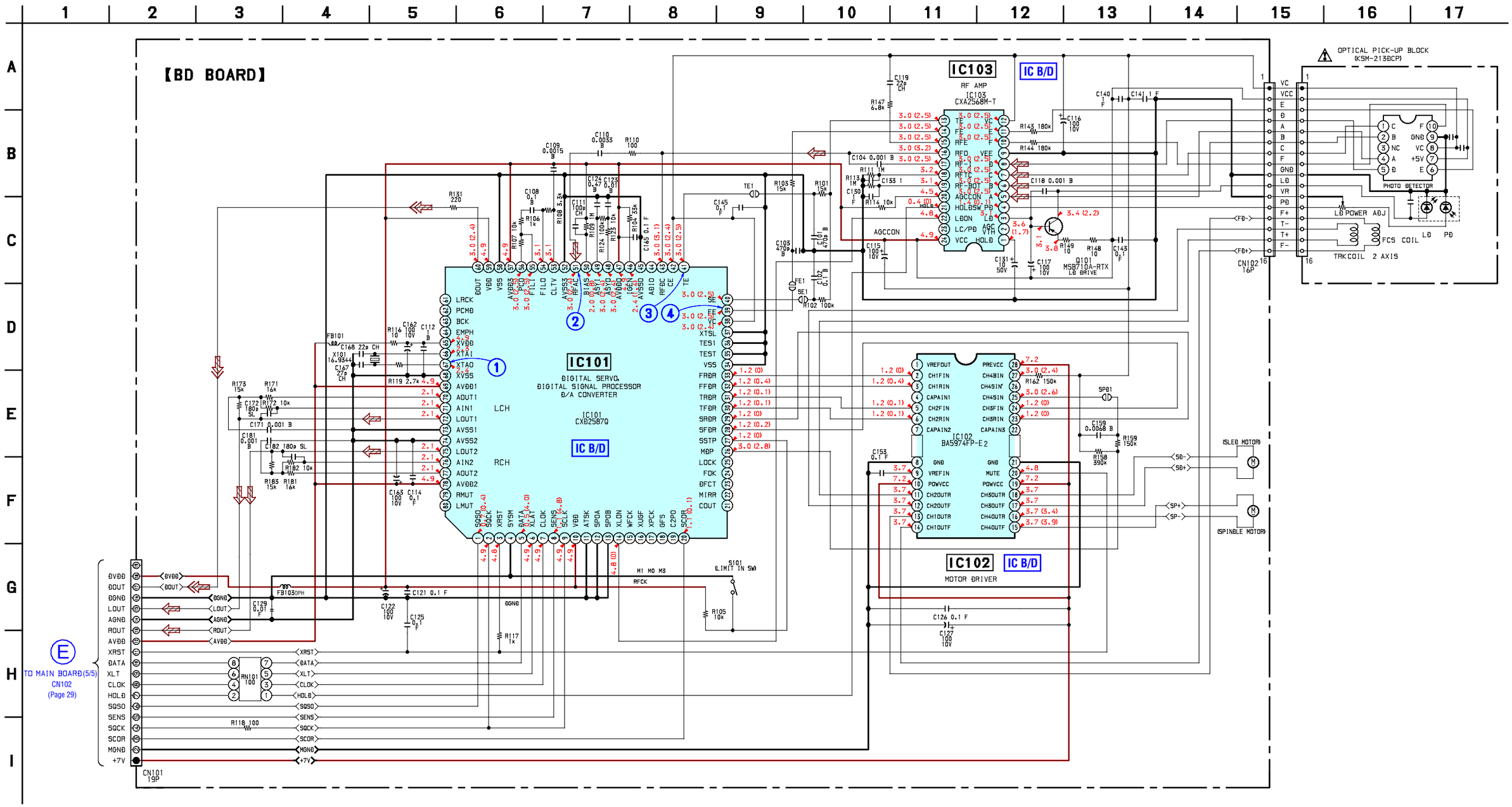


• **Semiconductor Location**

Ref. No.	Location
IC101	B-2
IC102	C-3
IC103	B-2
Q101	A3

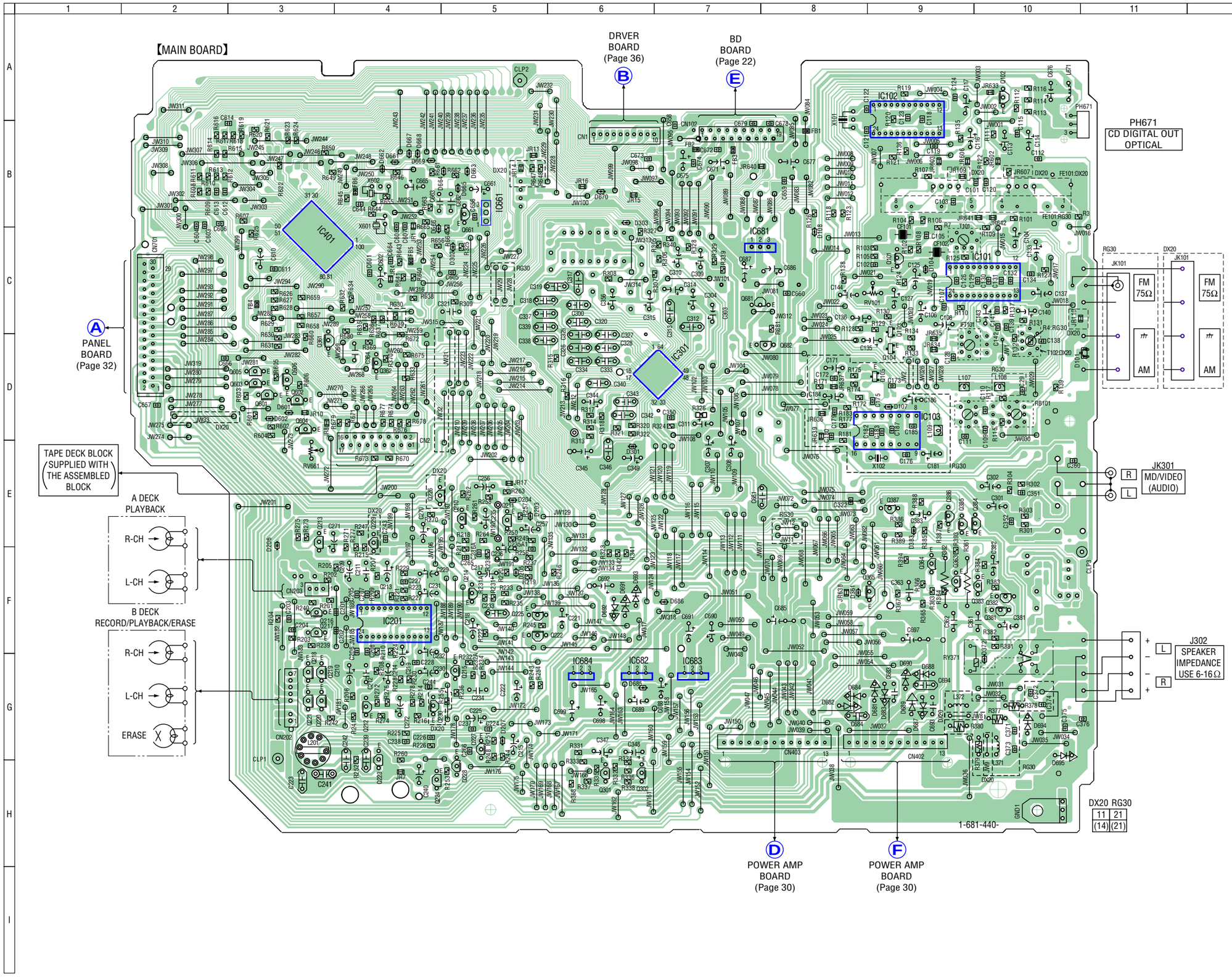
6-4. SCHEMATIC DIAGRAM – BD SECTION –

• See page 19 for Waveforms. • See page 40,41 for IC Block Diagrams.



6-5. PRINTED WIRING BOARD – MAIN SECTION –

• See page 19 for Circuit Boards Location.

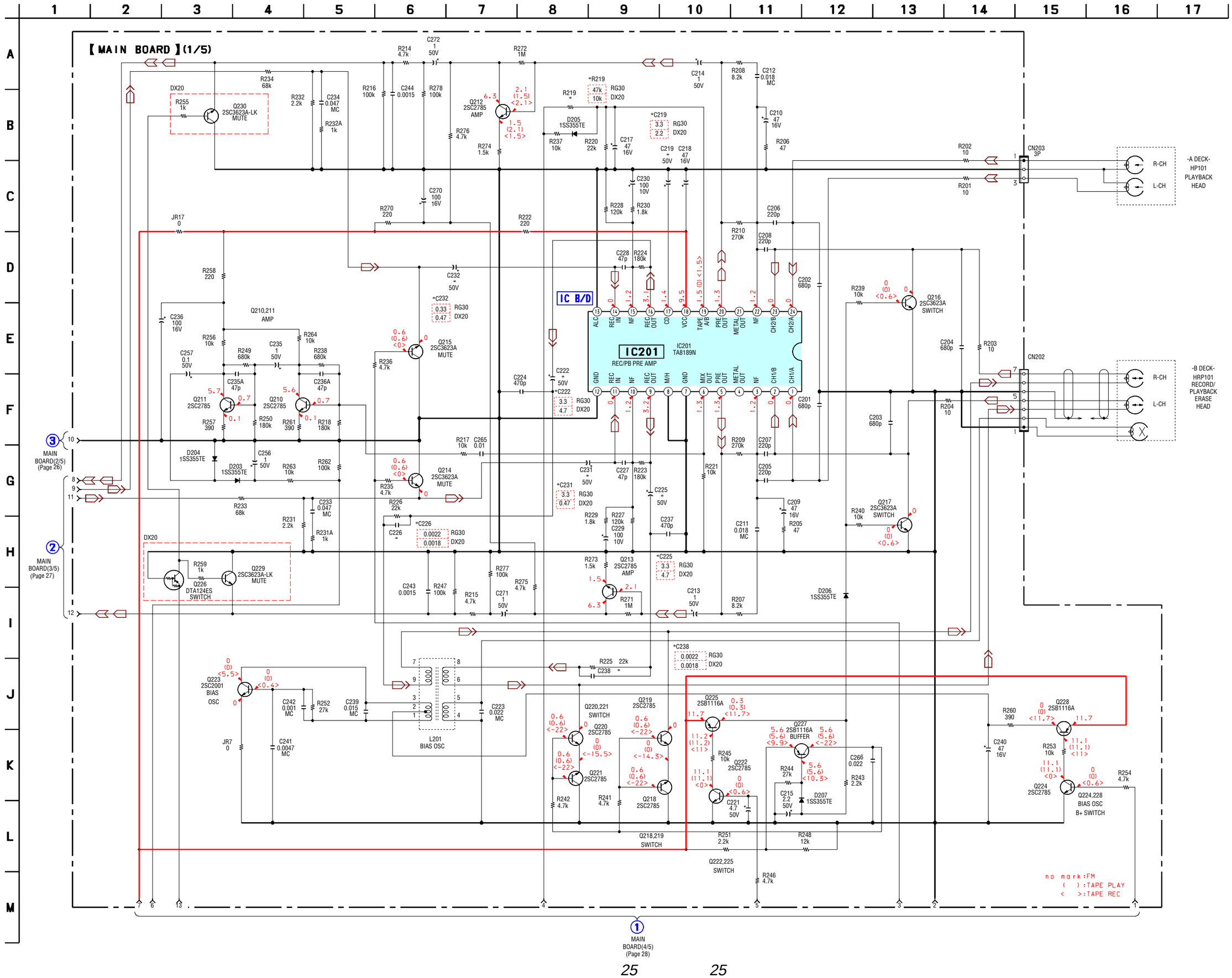


• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D101	D-11	Q101	C-9
D104	C-9	Q102	A-10
D107	D-9	Q103	C-9
D108	C-8	Q104	D-9
D203	E-5	Q105	D-9
D204	E-5	Q210	E-5
D205	F-5	Q211	E-5
D206	E-3	Q212	G-4
D207	G-5	Q213	E-3
D301	E-6	Q214	F-5
D302	C-5	Q215	G-5
D303	B-6	Q216	F-3
D361	F-8	Q217	F-3
D372	G-10	Q218	G-3
D383	E-9	Q219	G-3
D601	D-3	Q220	G-3
D602	D-3	Q221	G-3
D661	B-4	Q222	F-5
D662	B-4	Q223	H-4
D663	B-5	Q224	H-4
D664	B-5	Q225	F-5
D665	B-5	Q226	E-4
D666	C-4	Q227	G-5
D667	B-4	Q228	H-5
D668	B-4	Q229	E-4
D669	B-4	Q230	G-4
D670	B-6	Q301	H-6
D681	G-9	Q302	H-6
D682	H-8	Q361	D-3
D683	G-9	Q362	D-4
D684	H-8	Q363	F-9
D685	G-6	Q364	F-9
D686	F-7	Q365	F-9
D687	G-9	Q381	F-10
D688	G-9	Q382	F-10
D689	G-9	Q383	F-10
D690	G-9	Q384	E-10
D691	F-6	Q385	E-9
D692	F-6	Q386	E-9
D693	F-6	Q387	E-9
D694	G-10	Q601	D-3
D695	G-10	Q602	D-3
		Q603	D-3
IC101	C-10	Q604	D-3
IC102	A-9	Q605	D-3
IC103	D-9	Q606	D-3
IC201	F-4	Q661	B-5
IC301	D-7	Q681	C-7
IC401	C-3	Q682	D-8
IC661	B-5		
IC681	C-7		
IC682	G-6		
IC683	G-7		
IC684	G-6		

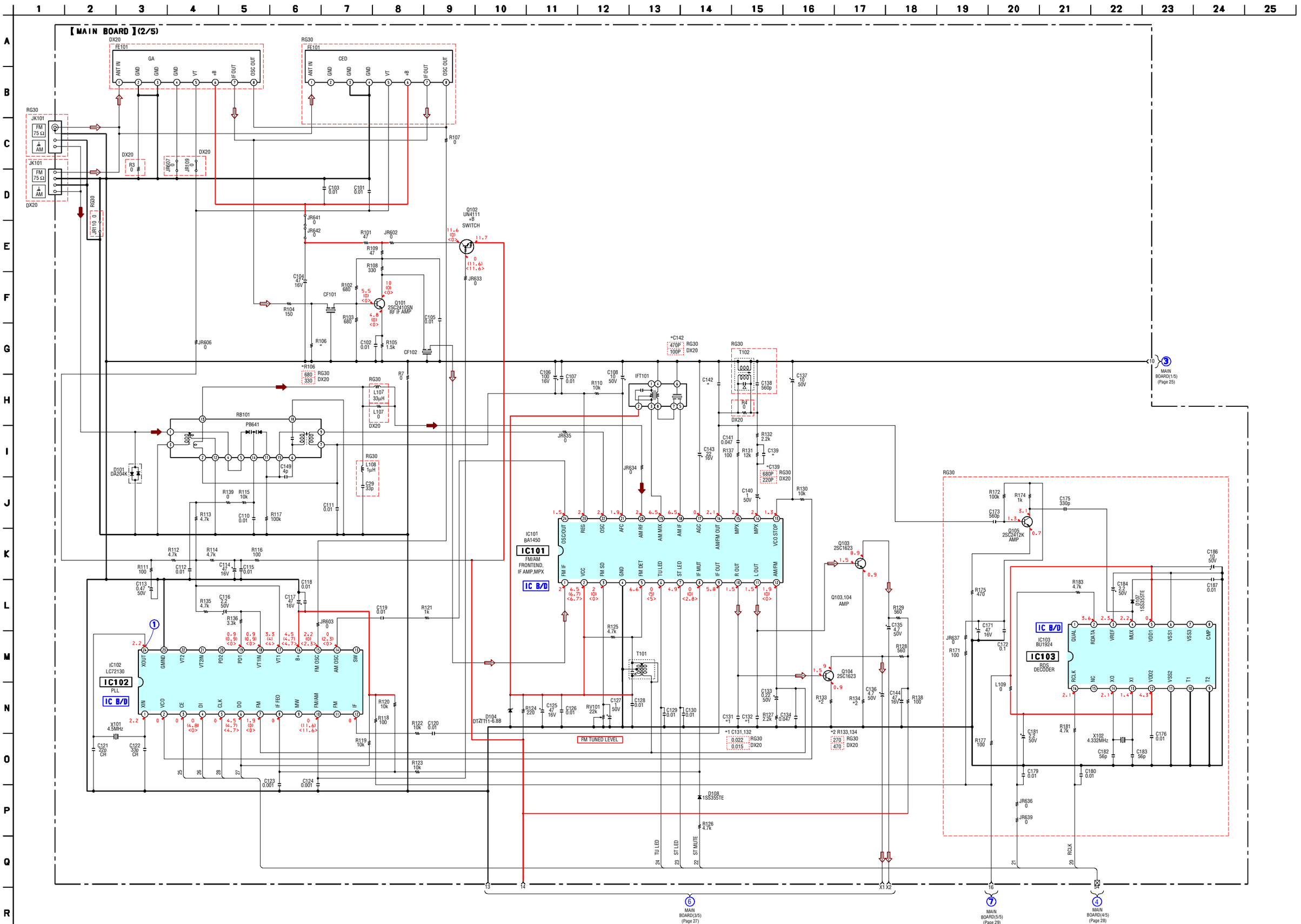
6-6. SCHEMATIC DIAGRAM – MAIN SECTION (1/5) –

• See page 42 for IC Block Diagrams.

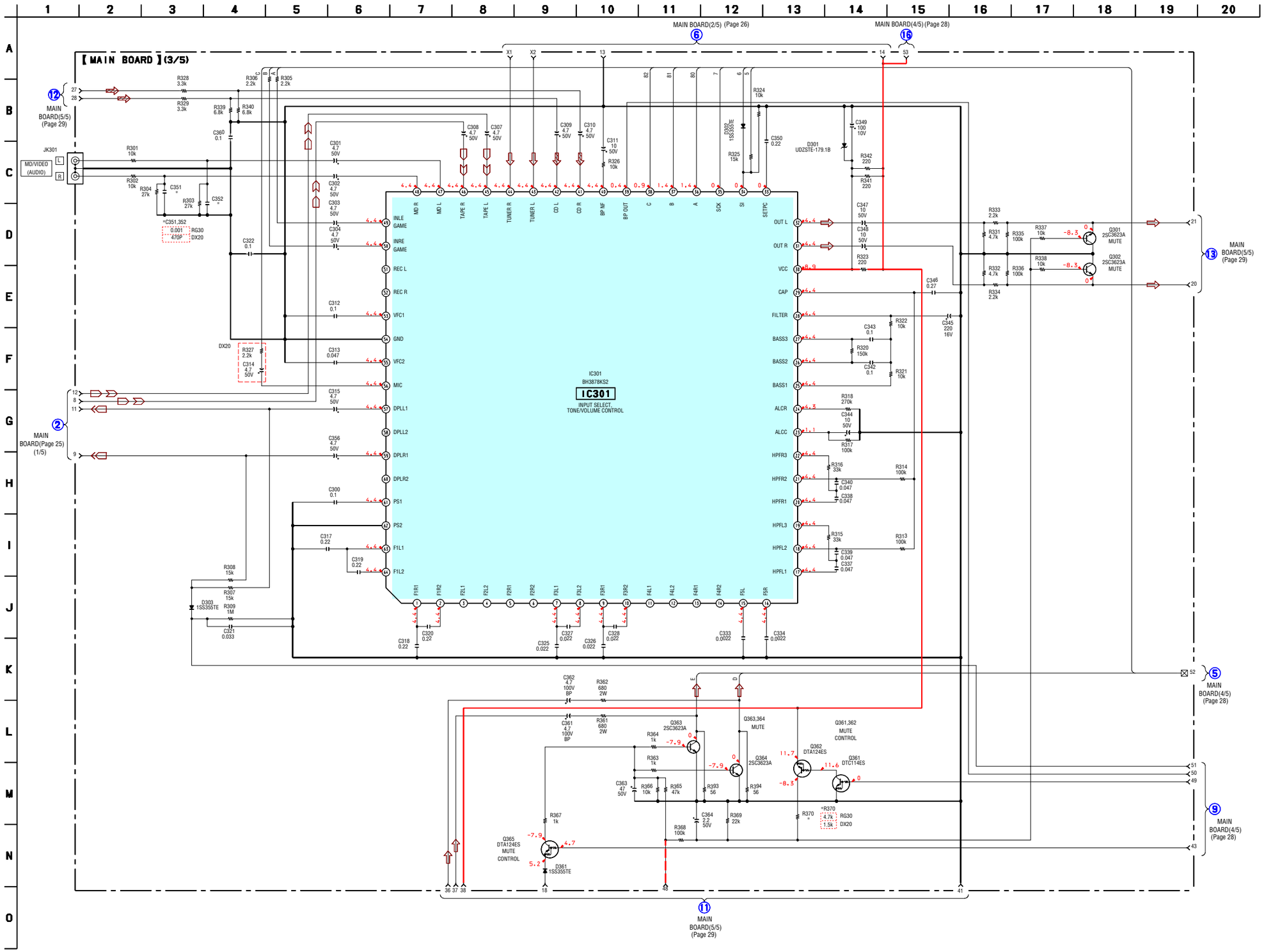


6-7. SCHEMATIC DIAGRAM – MAIN SECTION (2/5) –

• See page 19 for Waveforms. • See page 41,42 for IC Block Diagrams.

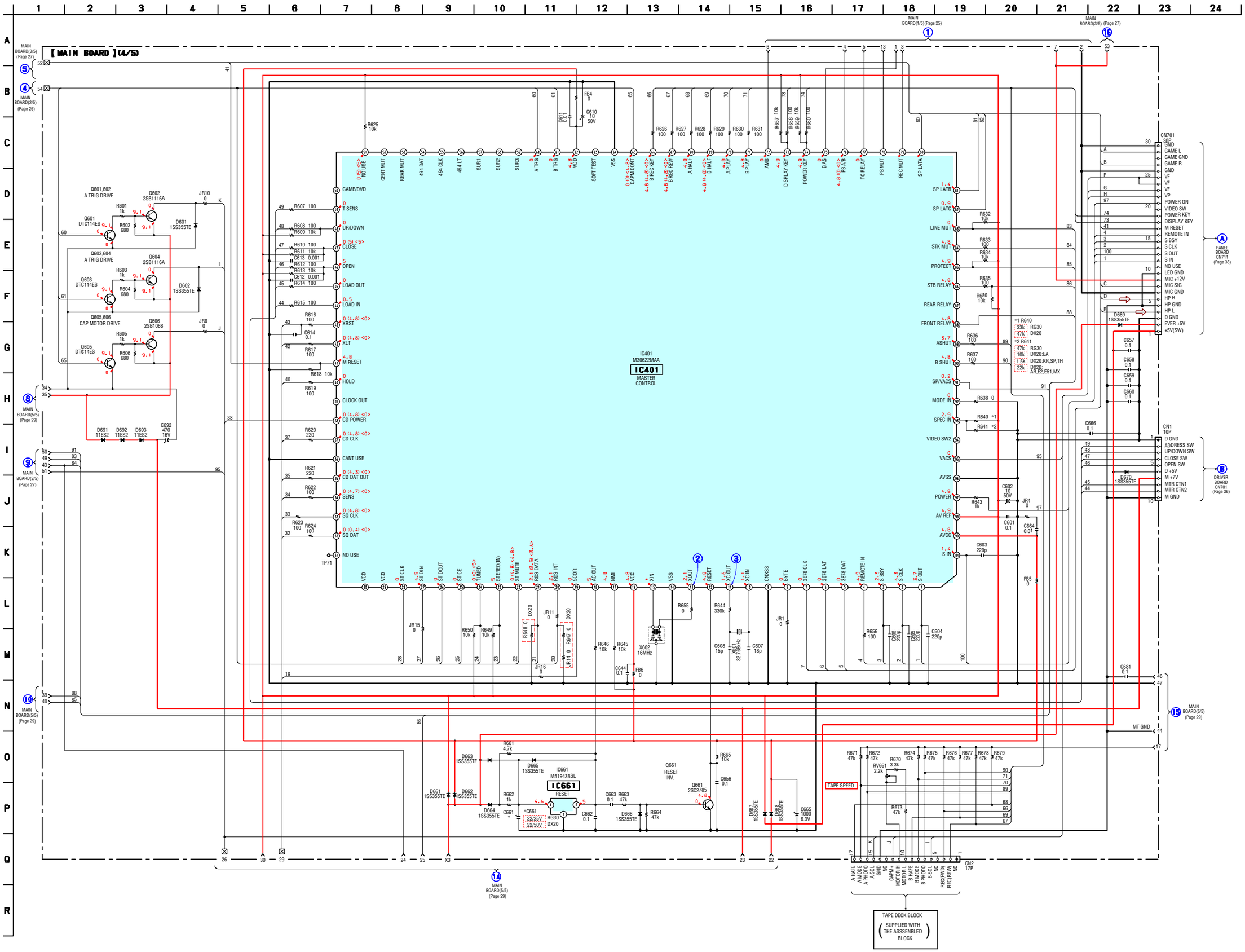


6-8. SCHEMATIC DIAGRAM – MAIN SECTION (3/5) –

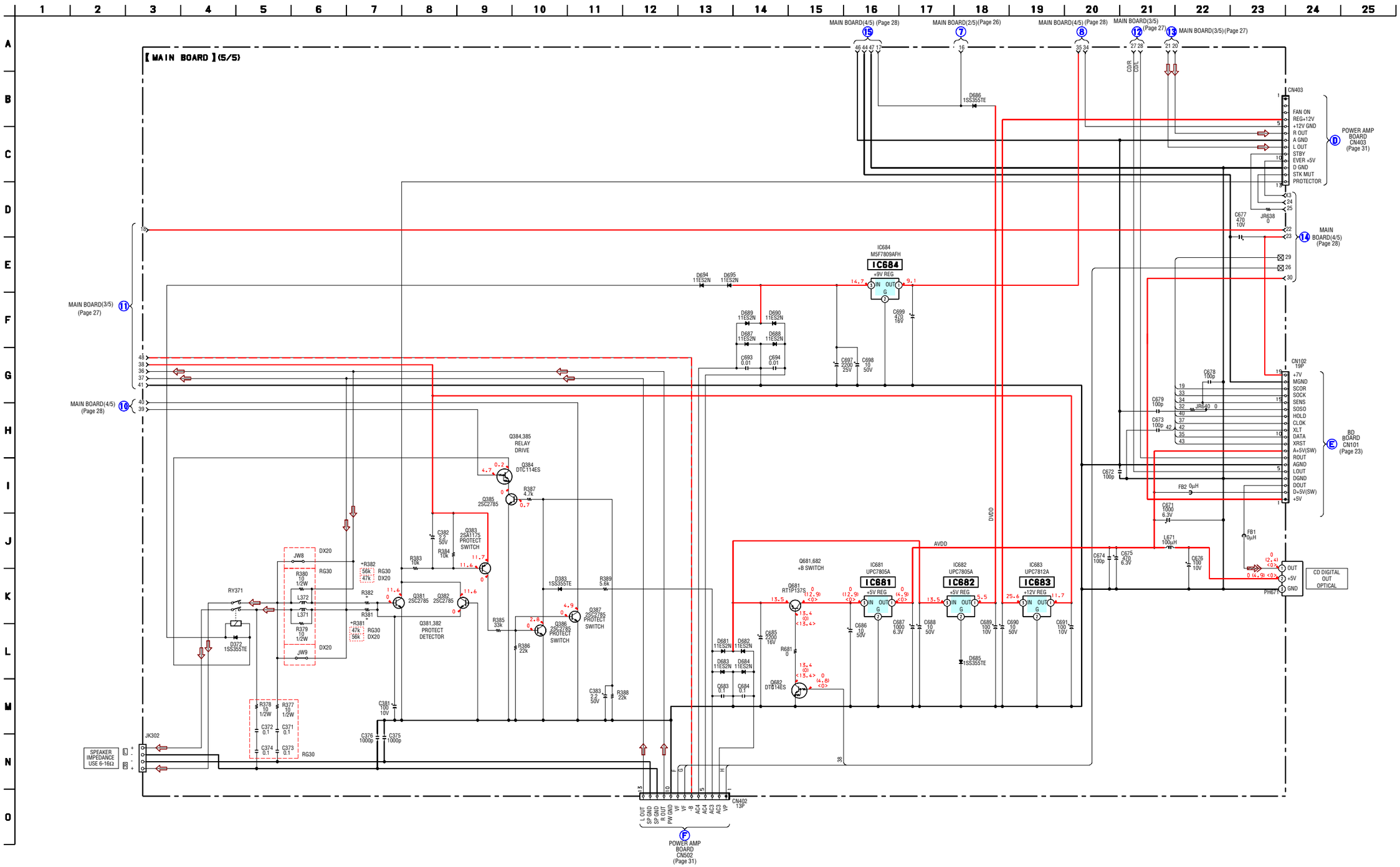


6-9. SCHEMATIC DIAGRAM – MAIN SECTION (4/5) –

• See page 19 for Waveforms. • See page 37 for IC Pin Function Description.

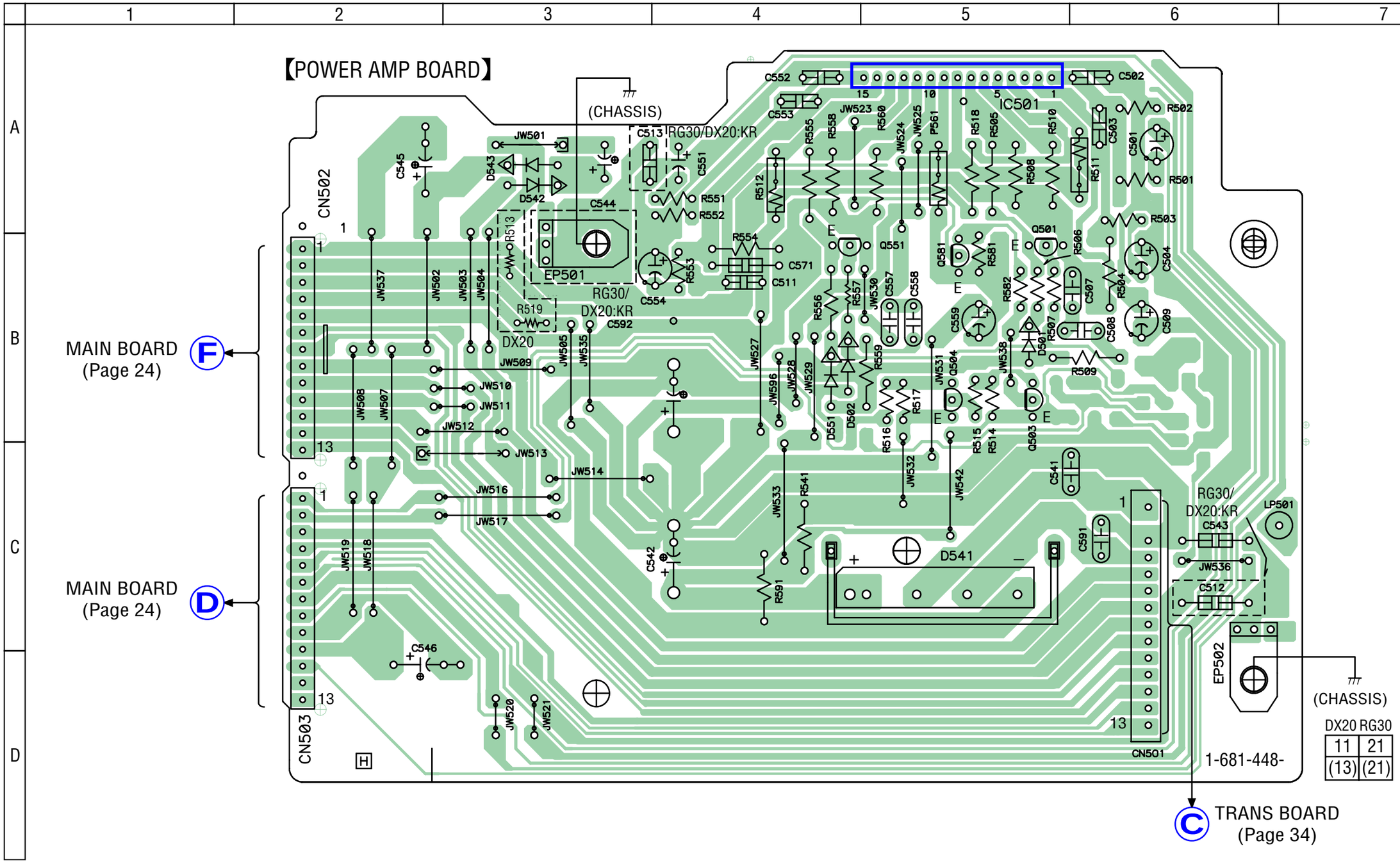


6-10. SCHEMATIC DIAGRAM – MAIN SECTION (5/5) –



6-11. PRINTED WIRING BOARD – POWER AMP SECTION –

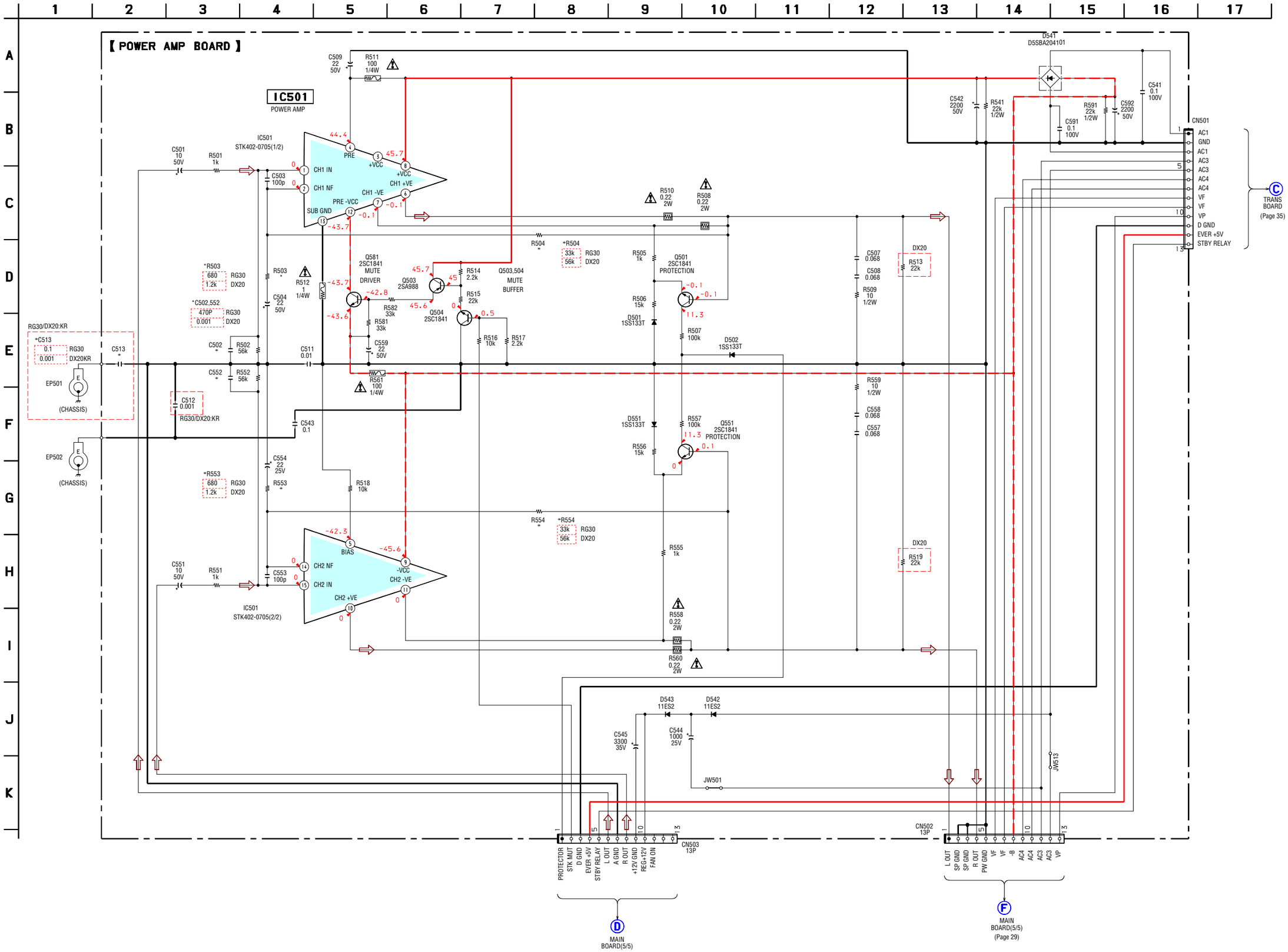
• See page 19 for Circuit Boards Location.



• **Semiconductor Location**

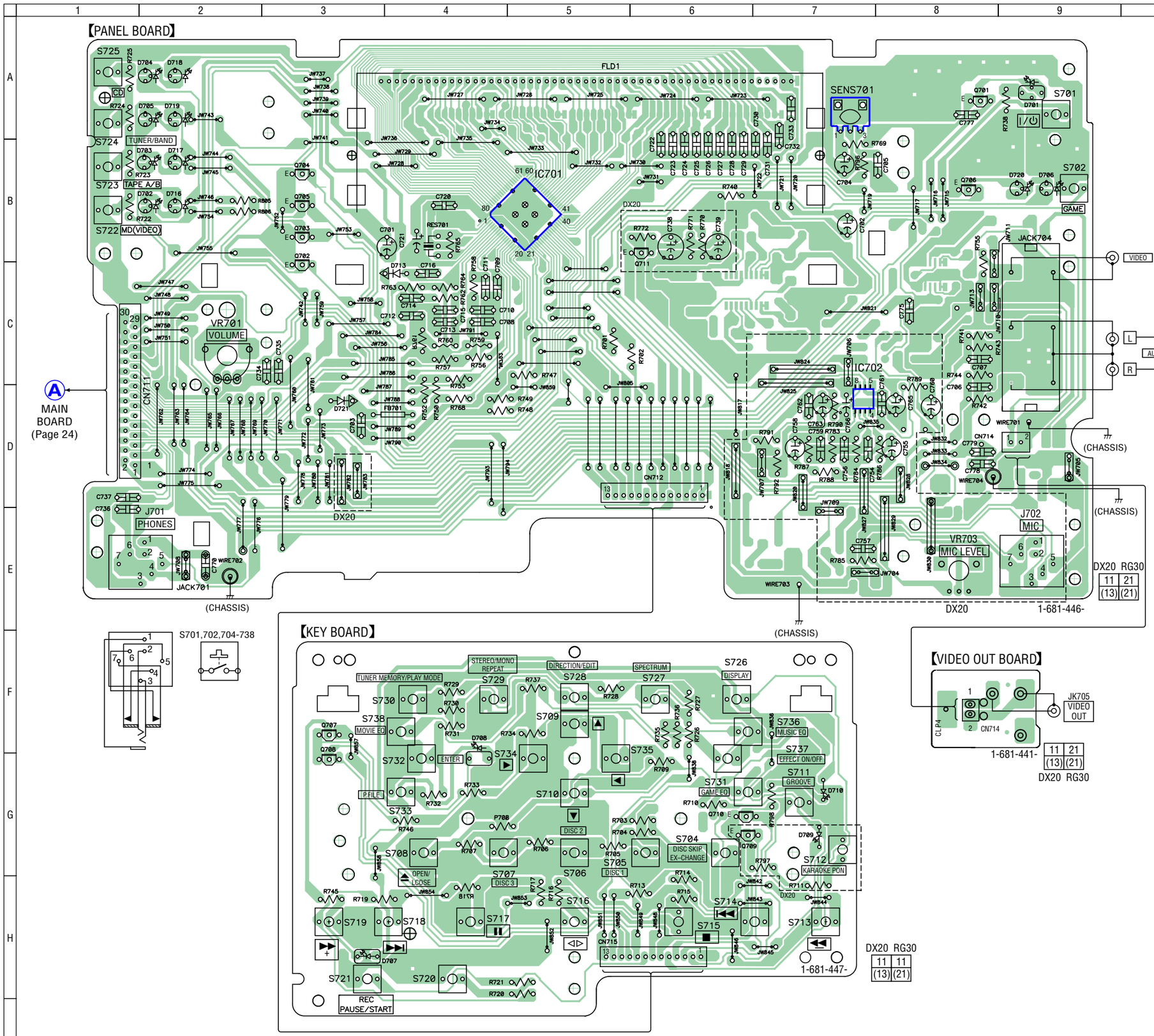
Ref. No.	Location
D501	B-5
D502	B-4
D541	C-5
D542	A-3
D543	A-3
D551	B-4
IC501	A-5
Q501	B-5
Q503	B-5
Q504	B-5
Q551	B-4
Q581	B-5

6-12. SCHEMATIC DIAGRAM – POWER AMP SECTION –



6-13. PRINTED WIRING BOARD – PANEL SECTION –

• See page 19 for Circuit Boards Location.

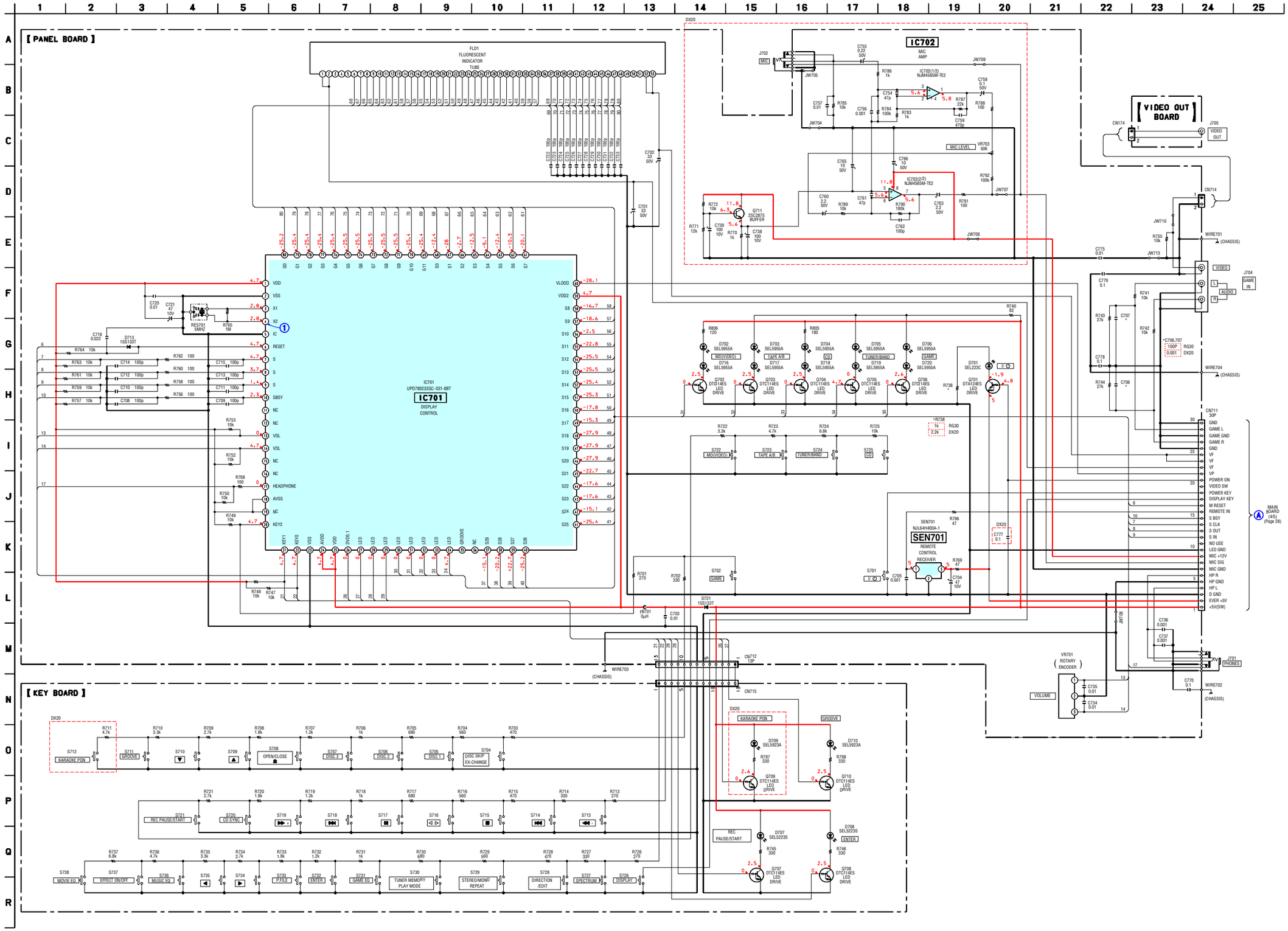


• **Semiconductor Location**

Ref. No.	Location
D701	A-9
D702	B-2
D703	B-2
D704	A-2
D705	A-2
D706	B-9
D707	H-3
D708	F-4
D709	G-7
D710	G-7
D713	C-4
D716	B-2
D717	B-2
D718	A-2
D719	A-2
D720	B-9
D721	D-3
IC701	B-5
IC702	D-7
SEN701	A-7
Q701	A-8
Q702	B-3
Q703	B-3
Q704	B-3
Q705	B-3
Q706	B-8
Q707	F-3
Q708	G-3
Q709	G-6
Q710	G-6
Q711	B-6

6-14. SCHEMATIC DIAGRAM – PANEL SECTION –

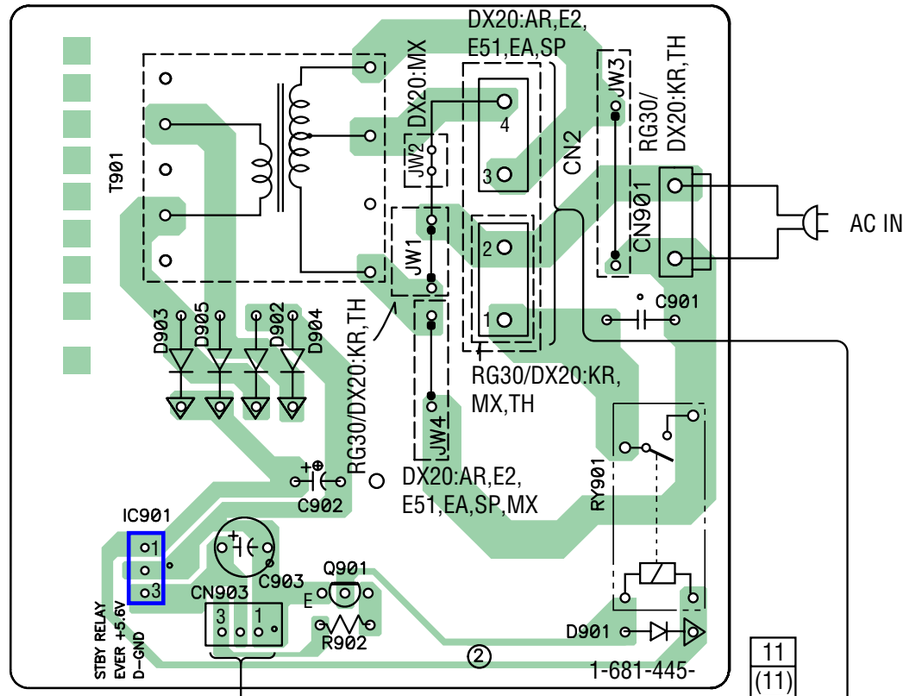
• See page 19 for Waveforms.



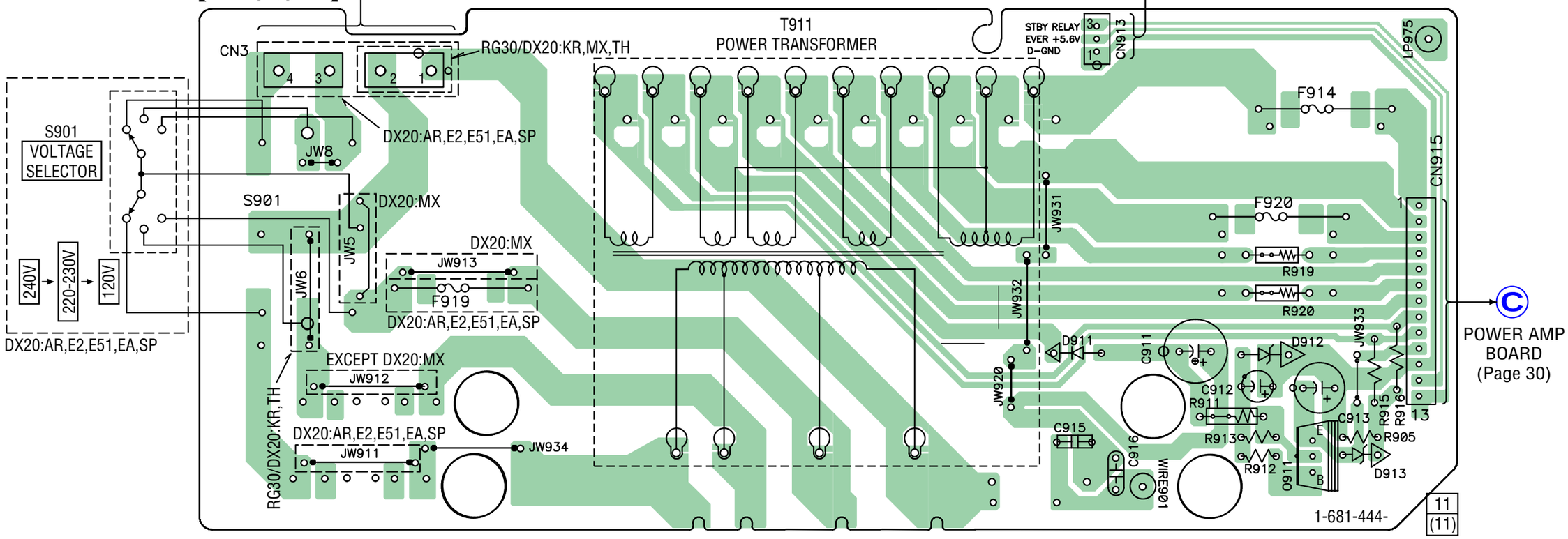
6-15. PRINTED WIRING BOARD – TRANS SECTION –

• See page 19 for Circuit Boards Location.

【SUB TRANS BOARD】



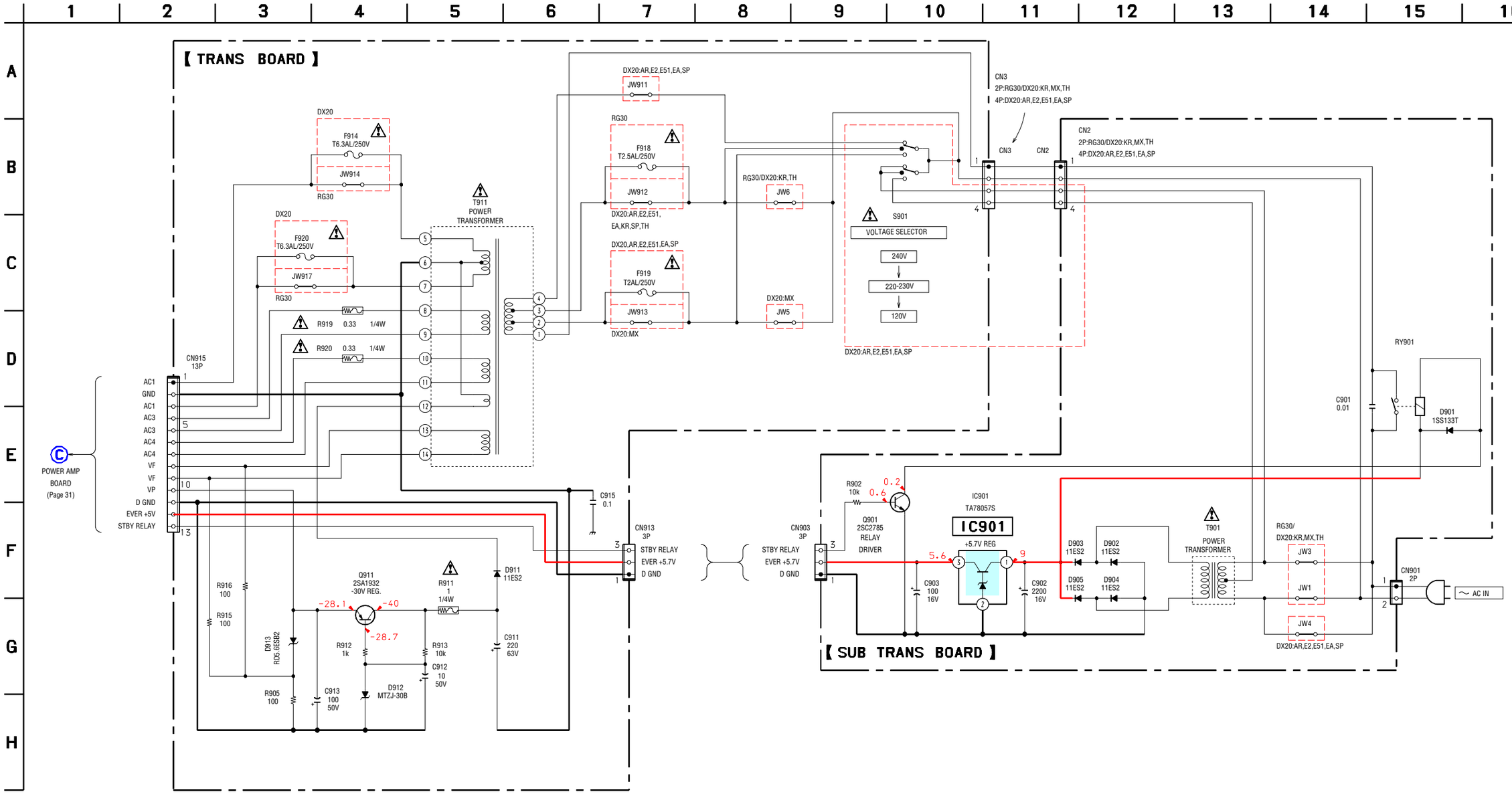
【TRANS BOARD】



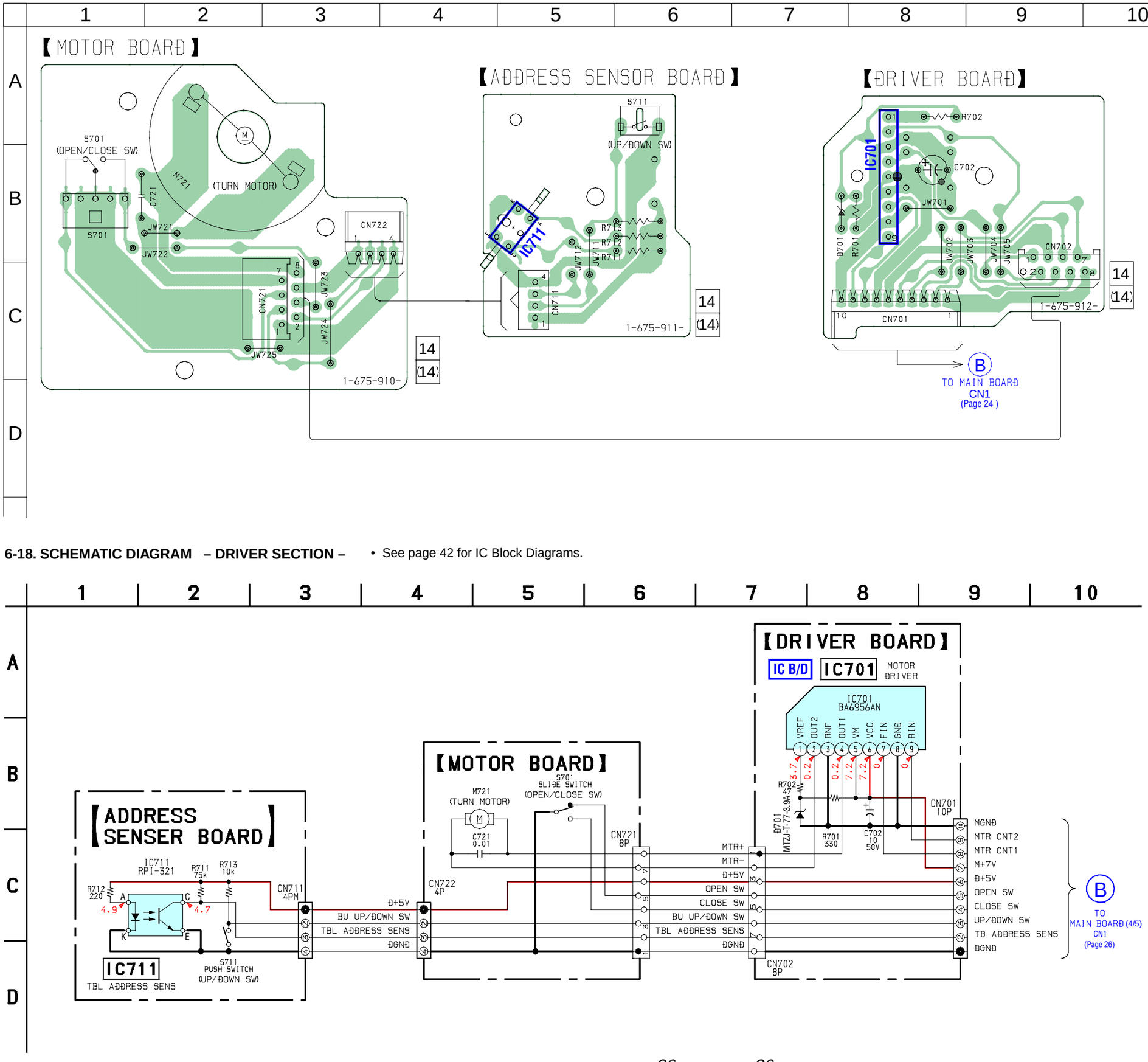
• **Semiconductor Location**

Ref. No.	Location
D901	C-4
D902	B-3
D903	B-2
D904	B-3
D905	B-2
D911	E-6
D912	E-7
D913	F-8
IC901	C-2
Q901	C-3
Q911	F-7

6-16. SCHEMATIC DIAGRAM – TRANS SECTION –



6-17. PRINTED WIRING BOARD – DRIVER SECTION – • See page 19 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D707	E-1
IC701	B-8
IC711	B-5

6-18. SCHEMATIC DIAGRAM – DRIVER SECTION – • See page 42 for IC Block Diagrams.

6-19. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC401 M30622MCA-B23FP (MASTER CONTROL)

Pin No.	Pin Name	I/O	Description
1	S-OUT	O	Serial data output the display control.
2	S-CLK	O	Serial clock output from main controller.
3	S-BSY	I	Busy signal input from the display control. “L” : busy
4	REMOTE IN	I	Pemoto commander input.
5	3878-DAT	O	Data signal output for IC301(BH3878KS2)
6	3878-LAT	O	Latch signal output for IC301(BH3878KS2)
7	3848-CLK	O	Clock signal output for IC301(BH3878KS2)
8	BYTE	—	Connected to ground.
9	CN VSS	—	Connected to ground.
10	XC IN	I	SUB SYSTEM CLOCK input.(32.768MHz)
11	XC OUT	O	SUB SYSTEM CLOCK output.(32.768MHz)
12	RESET	I	System reset input.
13	X OUT	O	MAIN SYSTEM CLOCK output.(16MHz)
14	VSS	—	Connected to ground.
15	X IN	I	MAIN SYSTEM CLOCK input.(16MHz)
16	VCC	I	Power supply.(+5V)
17	NMI	I	PULL UP.(EVER+5V)
18	AC-CUT	I	AC CUT ON(L)/OF(H) CHECK.
19	RCOR	I	CD Q-data request signal input.
20	RDS-INT	I	RDS interrupt signal input.
21	RDS-DATA	I	RDS data signal input.
22	ST-MUTE	O	Tuner mute signal output.
23	SSTEREO(IN)	I	STEREO detect signal input.L=ON,H=OFF
24	TUNER	I	TUNER detect signal input.L=ON,H=OFF
25	ST-CE	O	TUNER chip eneble output.
26	ST-DOUT	O	TUNER data output.
27	ST-DIN	I	TUNER data input.
28	ST-CLK	O	TUNER clock signal output.
29	VCD	—	Not used.
30	VCD	—	Not used.
31	NO USE	—	Not used.
32	SQ-DAT IN	I	Subcode Q data input(CD data).
33	SQ-CLK	I	Subcode Q clock input(CD clock).
34	SENS	I	BD condition signal input.
35	CD-DAT OUT	O	CD data output.
36	CAN’T-USE	—	Not used.
37	CD-CLK	O	CD clock output.
38	CD-POWER	O	CD-POWER ON/OFF signal output.H=ON,L=OFF
39	CLOCK-OUT	O	Not used (open).
40	HOLD	O	HOLD signal output.
41	M-RESET	O	Micom reset signal output to the display control. “L” : reset
42	XLT	O	CD latch signal output.
43	XRST	O	CD reset signal output.
44	LOAD-IN	O	Loading motor control signal output (Loading).
45	LOAD-OUT	O	Loading motor control signal output (un Loading).
46	OPEN	I	Tray open detect signal input.
47	CLOSE	I	Tray close detact signal input.
48	UP/DOWN	I	Pick-up up/down detect signal input.
49	T-SENS	I	CD table detect signal input.
50	GAME/DVD	—	Not used.

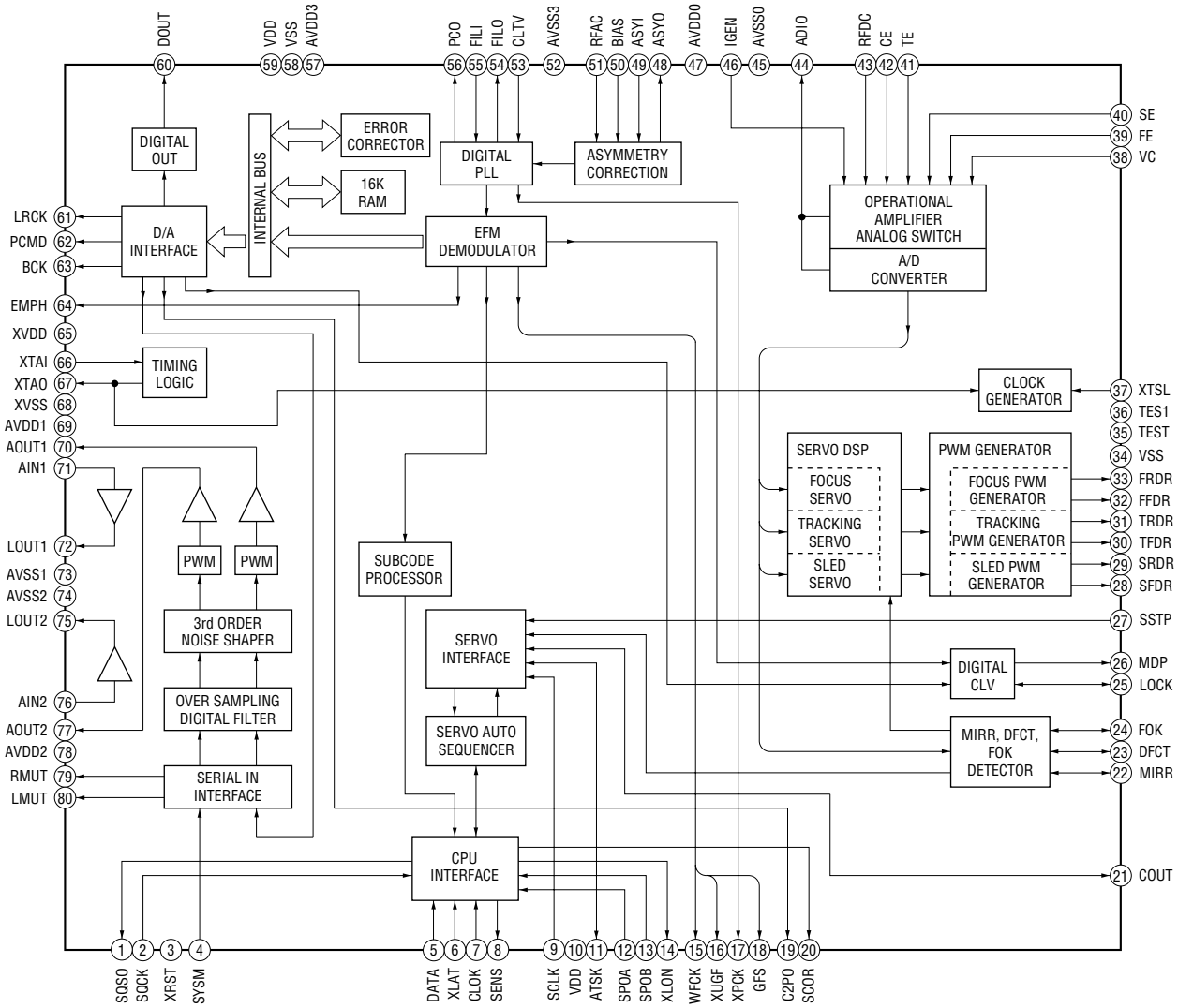
Pin No.	Pin Name	I/O	Description
51	NO USE	—	Not used.
52	CENT-MUTE	—	Not used.
53	REAR-MUT	—	Not used.
54	494-DAT	—	Not used.
55	494-CLK	—	Not used.
56	494-LT	—	Not used.
57	SUR1	—	Not used.
58	SUR2	—	Not used.
59	SUR3	—	Not used.
60	A-TRG	O	A deck trigger control signal output.H=ON,L=OFF
61	B-TRG	O	B deck trigger control signal output.H=ON,L=OFF
62	VDD	I	Power supply.(+5V)
63	SOFT TEST	I	Not used.
64	VSS	—	Connected to ground.
65	CAMP-CONT	O	Capstan motor REV/FWD/STOP control signal output.H=REV,L=FWD/STOP
66	B-REC FWD	I	Detection input from the deck-B rec forward detect switch. “L” : rec
67	B-REC REW	I	Detection input from the deck-B rec reverse detect switch. “L” : rec
68	A-HAFE	I	A deck hafe detect signal input.
69	B-HAFE	I	B deck hafe detect signal input.
70	A-PLAY	I	A deck play detect signal input.
71	B-PLAY	I	B deck play detect signal input.
72	AMS-IN	I	AMS signal input.L=ON,H=OFF
73	DISPLAY KEY	O	DISPLAY KEY control signal output.
74	POWER-KEY	O	POWER KEY control signal output.
75	BIAS	O	BIAS ON/OFF signal output.H=ON,L=OFF
76	PB-A/B	O	Playback deck A/B select signal output.H=High,L=Normal
77	TC-RELAY	O	Tape deck relay ON/OFF signal output.H=ON,L=OFF
78	PB-MUT	O	PB mute ON/OFF signal output .H=ON,L=OFF
79	REC-MUT	O	REC mute ON/OFF signal output .H=ON,L=OFF
80	SP-LATA	O	Serial data latch pulse output to BH3878KS2 (IC301)
81	SP-LATB	O	Serial data latch pulse output to BH3878KS2 (IC301)
82	SP-LATC	O	Serial data latch pulse output to BH3878KS2 (IC301)
83	LINE-MUT	O	Line mute signsl output.L=ON,H=OFF
84	STK-MUT	O	Power amplifier mute ON/OFF signal output.H=ON,L=OFF
85	PROTECT	I	Speaker protect signal input.L=ON,H=OFF
86	STB-RELAY	O	STANDBY relay control signal output.
87	REAR-RELAY	O	Rear speaker relay control output.
88	FRONT-RELAY	O	Front speaker relay control output.
89	A-SHUT	O	A deck reel pulse detect signal output.
90	B-SHUT	O	B deck reel pulse detect signal output.
91	SP/VACS	I	SP/VACS (tape) select signal input.
92	MODE IN	I	Destination setting terminal.
93	SPEC-IN	I	Version select signal input.
94	VIDEO SW2	—	Not used
95	VACS	I	Tape recording level input.
96	AVSS	—	Connected to ground.
97	POWER-KEY	O	POWER ON/OFF signal output.H=ON,L=OFF
98	AV-REF	—	Analog reference voltage.
99	AVCC	—	Power supply.(+5V)
100	S-IN	I	Serial data input the display control.

• PANEL BOARD IC701 UPD780232GC-031-8BT (DISPLAY CONTROL)

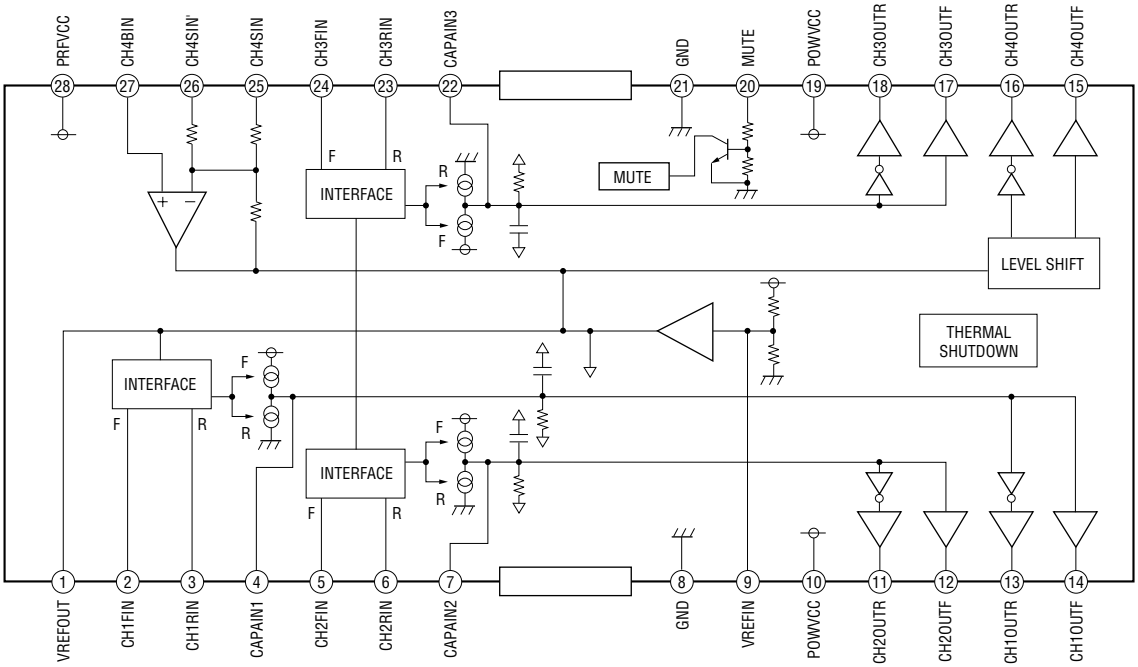
Pin No.	Pin Name	I/O	Description
1	VDD	I	Power supply.(+5V)
2	VSS	—	Connected to ground.
3	X1	O	System clock output terminal.(5MHz)
4	X2	I	System clock input terminal.(5MHz)
5	IC	—	Connected to ground.
6	RESET	I	Reset signal input from main controller.
7	S-CLK	I	Serial clock input from main controller.
8	S-IN	I	Serial data input from main controller.
9	S-OUT	I	Serial data output from main controller.
10	SBSY	O	Busy signal output.
11	NO USE	—	Not used.
12	NO USE	—	Not used.
13	VOL-A	I	VOLUME A signal input.
14	VOL-B	I	VOLUME B signal input.
15	NO USE	—	Not used.
16	NO USE	—	Not used.
17	HEADHONE	I	Headphone detect signal input. H=ON,L=OFF
18	AVSS	—	Connected to ground.
19	NO USE	—	Not used.
20 - 22	KEY2-KEY0	I	KEY input.(AD)
23	VSS	—	Connected to ground.
24	AVDD	I	Power supply.(+5V)
25	VDD	I	Power supply.(+5V)
26	DV5.1-LED	O	KARAOKE LED driver output.
27	PRO-LED	O	GROOVE LED driver output.
28	ENTER-LED	O	ENTER LED driver output.
29	REC-LED	O	REC LED driver output.
30	GAME-LED	O	GAME LED driver output.
31	MO/VIDEO-LED	O	MD(VIDEO) LED driver output.
32	TAPE-LED	O	TAPE LED driver output.
33	CD-LED	O	CD LED drover output.
34	TUNER-LED	O	TUNER LED driver output.
35	GROOVE	—	Not used.
36	NO USE	—	Not used.
37 - 58	S29-S8	O	FL segment signal output.
59	VDD2	I	Power supply.(+5V)
60	VLOOD	I	Power supply (-30V) at FL driver.
61 - 67	S7-S0	O	FL segment signal output.
68 - 80	G11-G0	O	FL gride output.

6-20. IC BLOCK DIAGRAMS

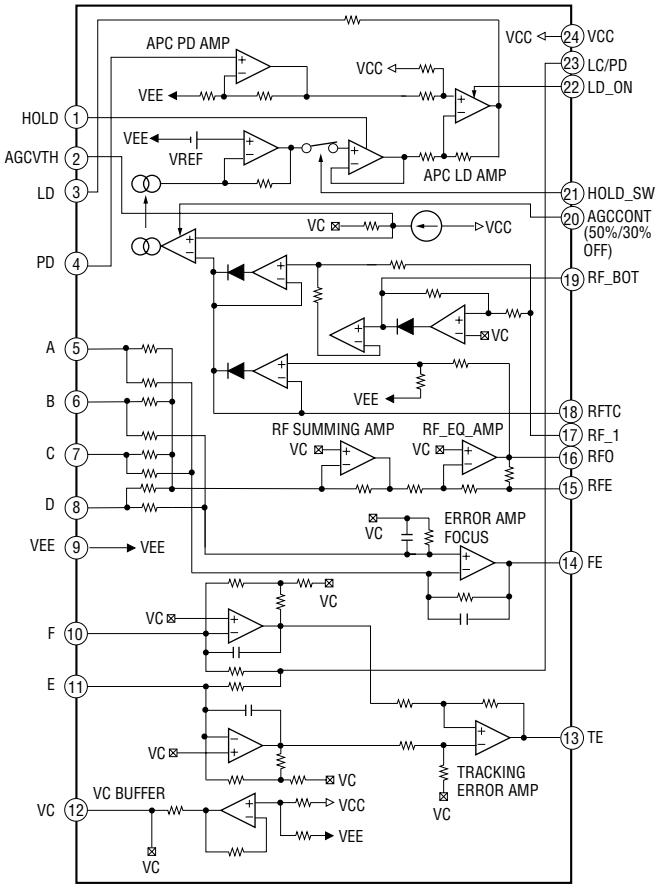
IC101 CXD2587Q (BD BOARD)



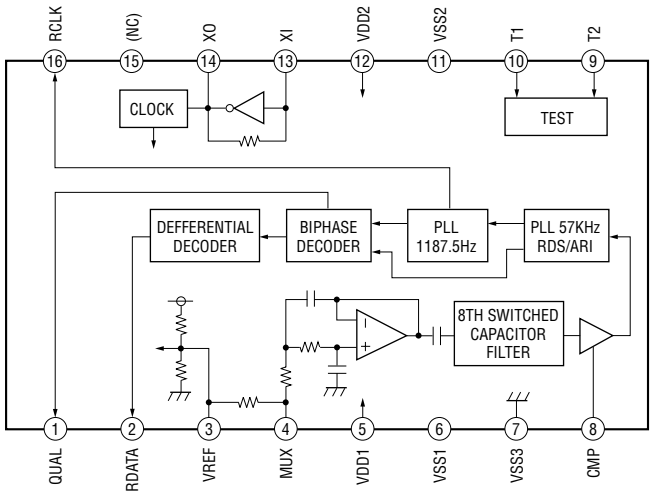
IC102 BA5974FP-E2 (BD BOARD)



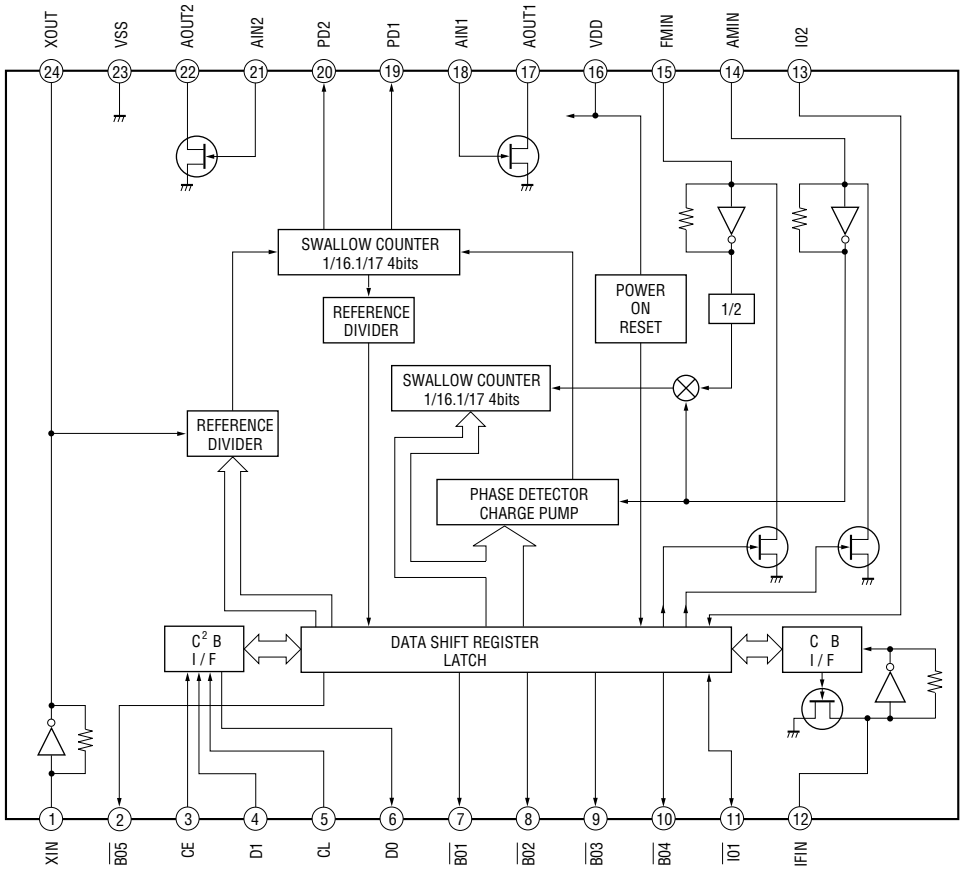
IC103 CXA2568M-T6 (BD BOARD)



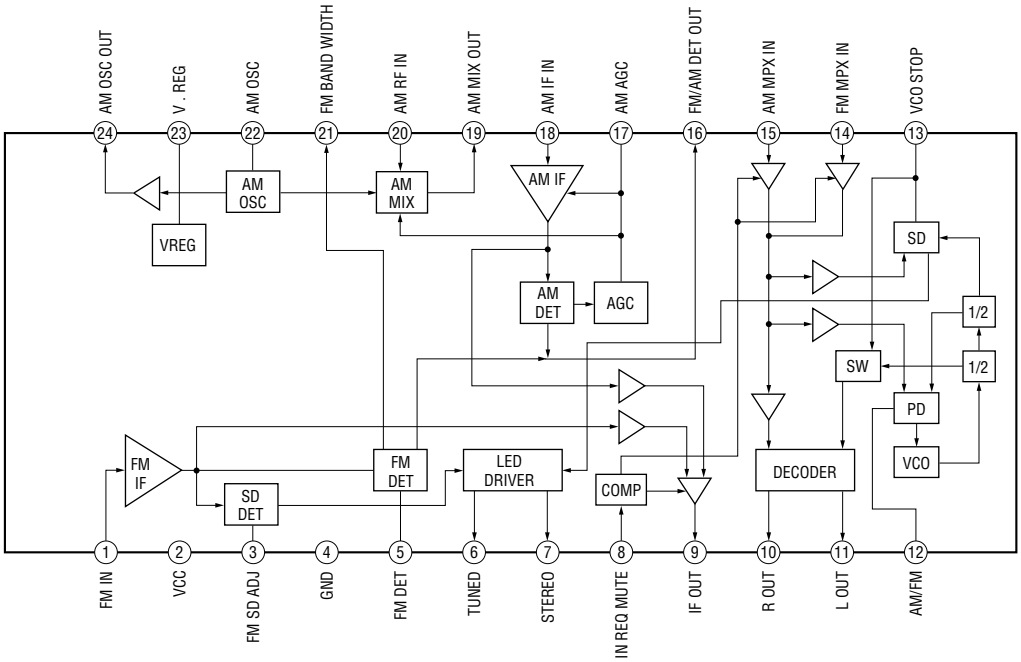
IC103 BU1924 (MAIN BOARD)



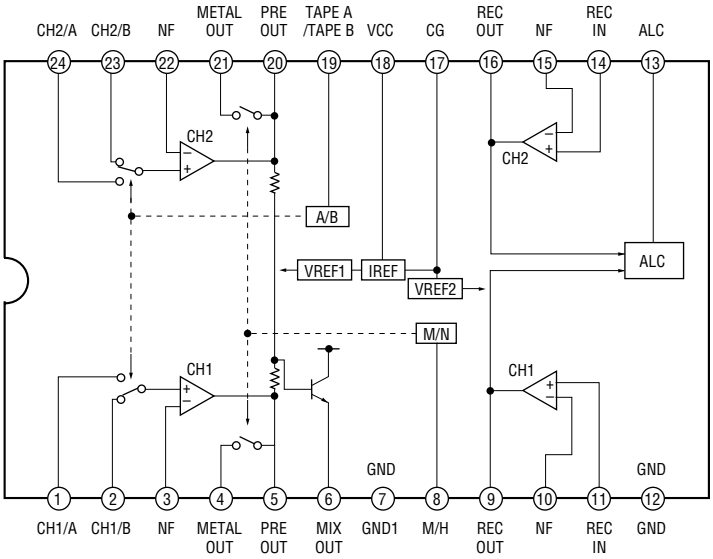
IC102 LC72130 (MAIN BOARD)



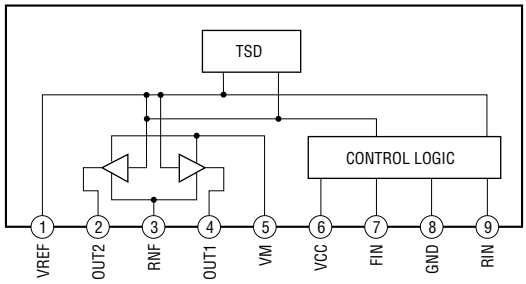
IC101 BA1450 (MAIN BOARD)



IC201 TA8189N (MAIN BOARD)



IC701 BA6956AN (DRIVER BOARD)

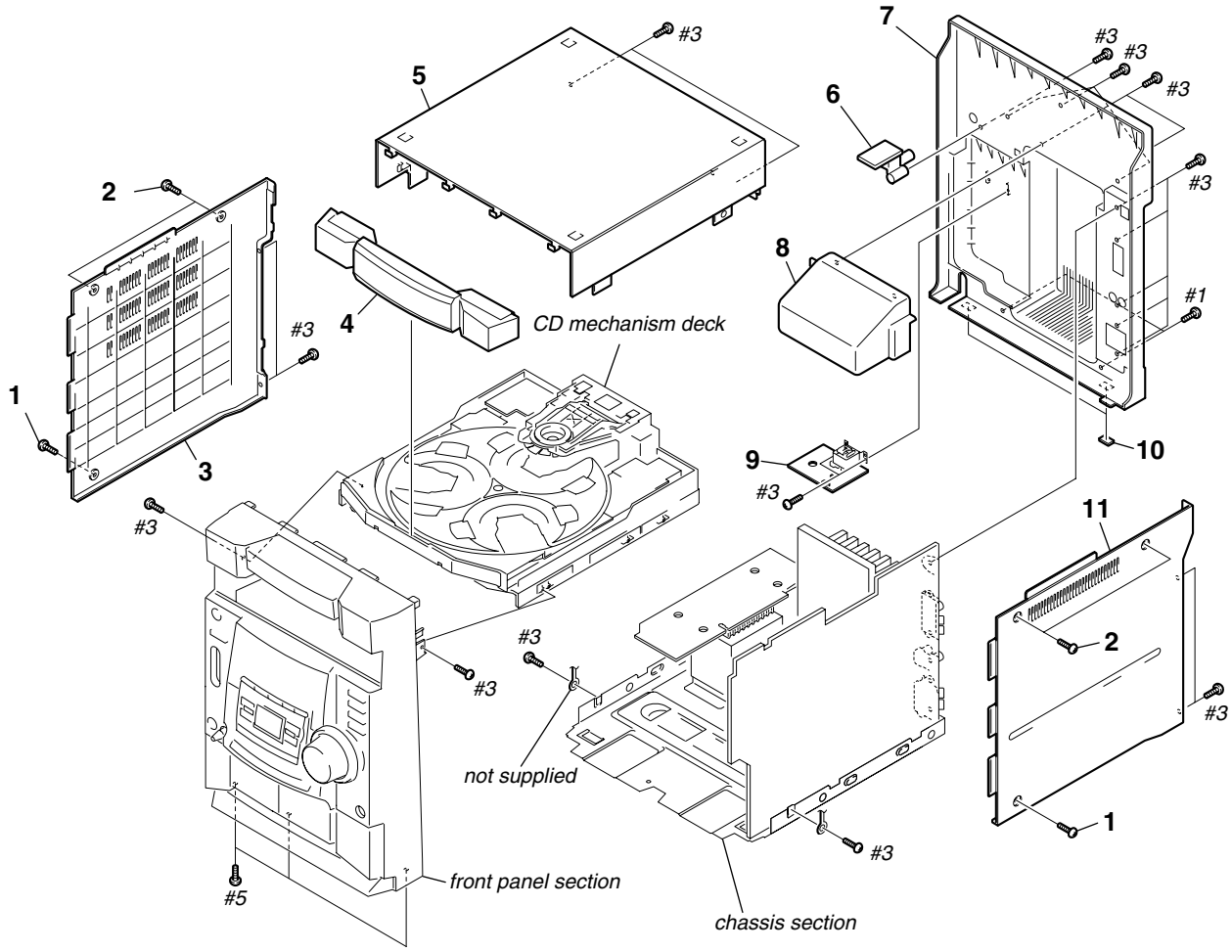


SECTION 7
EXPLODED VIEWS

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  EA : Saudi Arabia model
  SP : Singapore model
  TH : Thai model
  KR : Korea model
  MX : Mexican model
  AR : Argentina model
  E51 : Chiri and Peru model
  E2 : Central and South America model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

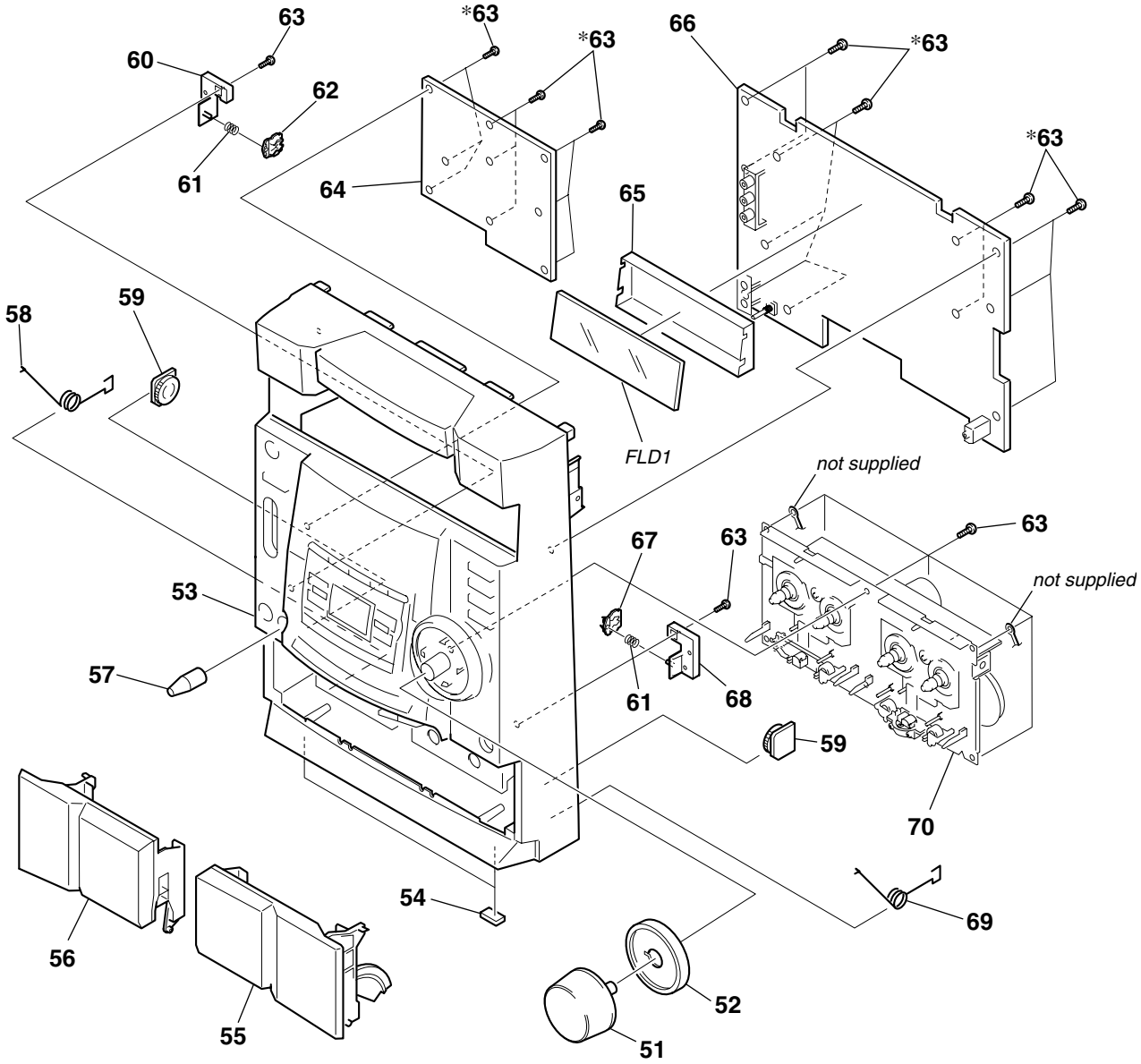
7-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)	
2	3-363-099-41	SCREW (CASE 3 TP2)	
3	4-224-549-01	CASE (SIDE-L)	
4	4-234-009-01	CD DOOR (RG30)	
4	4-234-009-11	CD DOOR (DX20)	
5	4-224-550-01	CASE (TOP)	
6	1-681-441-11	VIDEO OUT BOARD (DX20)	
6	1-681-441-21	VIDEO OUT BOARD (RG30)	
7	4-234-032-21	PANEL BACK (RG30)	
7	4-234-091-01	PANEL BACK (DX20:E2, E51, EA, SP, AR)	
7	4-234-091-61	PANEL BACK (DX20:KR, MX, TH)	
8	4-227-984-11	COVER (DUCT)	
9	1-681-445-11	SUB TRANS BOARD (DX20)	
9	1-681-445-21	SUB TRANS BOARD (RG30)	
10	4-225-252-01	CUSHION (FOOT)	
11	4-224-548-01	CASE(SIDE-R) (DX20)	
11	4-224-548-61	CASE(SIDE-R) (RG30)	

7-2. FRONT PANEL SECTION

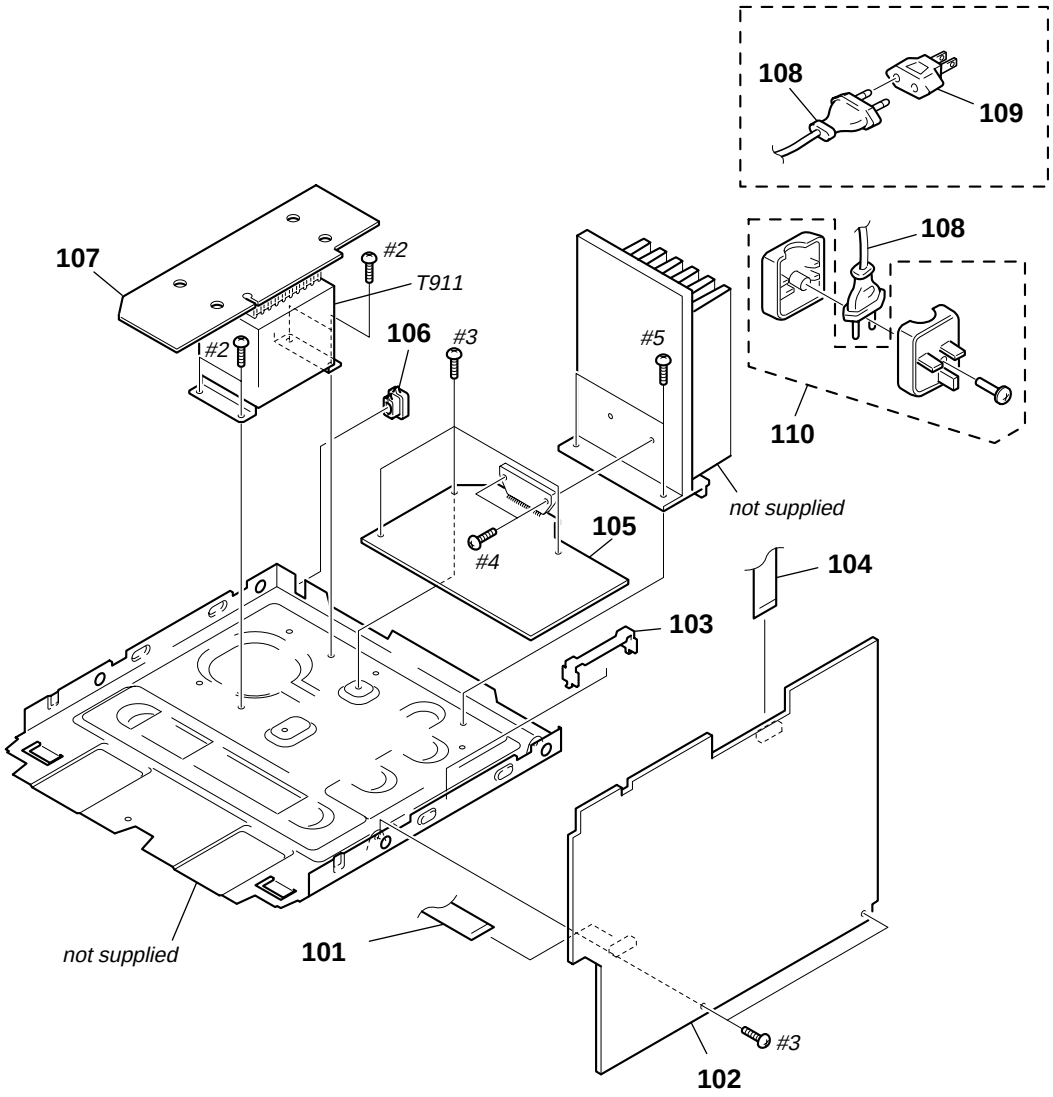
** For service only (Be sure to refer to "Service note" on page 4.)*



Ref. No.	Part No.	Description	Remark
51	4-234-019-01	VOLUME KNOB (RG30)	
51	4-234-019-11	VOLUME KNOB (DX20)	
52	4-234-015-01	VOL KNOB RING	
53	X-4953-757-1	PANEL FRONT ASSY (DX20)	
53	X-4953-887-1	PANEL FRONT ASSY (RG30)	
54	4-225-252-01	CUSHION (FOOT)	
55	X-4953-759-1	CASSETTE WINDOW R ASSY (DX20)	
55	X-4953-889-1	CASSETTE WINDOW R ASSY (RG30)	
56	X-4953-758-1	CASSETTE WINDOW L ASSY (DX20)	
56	X-4953-888-1	CASSETTE WINDOW L ASSY (RG30)	
57	4-231-805-01	KNOB (MIC) (DX20)	
58	4-233-981-01	CASSETTE DOOR SPRING L	
59	4-224-104-11	DAMPER	
60	4-224-562-01	BRACKET (HEART CAM L)	
61	4-224-803-01	SPRING (PUSH), COMPRESSION	

Ref. No.	Part No.	Description	Remark
62	4-224-560-01	CAM (L), HEART	
63	4-951-620-01	SCREW (2.6X8), +BVTP	
64	1-681-447-11	KEY BOARD	
65	4-234-016-01	FL HOLDER	
66	A-4476-797-A	PANEL BOARD, COMPLETE (DX20:E2, E51, EA, SP, AR, MX)	
66	A-4725-721-A	PANEL BOARD, COMPLETE (DX20:KR)	
66	A-4725-982-A	PANEL BOARD, COMPLETE (DX20:TH)	
66	A-4726-035-A	PANEL BOARD, COMPLETE (RG30)	
67	4-224-559-01	CAM(R), HEART	
68	4-224-561-01	BRACKET (HEART CAM R)	
69	4-233-982-01	CASSETTE DOOR SPRING R	
70	1-796-123-11	DECK, MECH (TC)	
FLD1	1-518-729-11	INDICATOR TUBE, FLUORESCENT	

7-3. CHASSIS SECTION

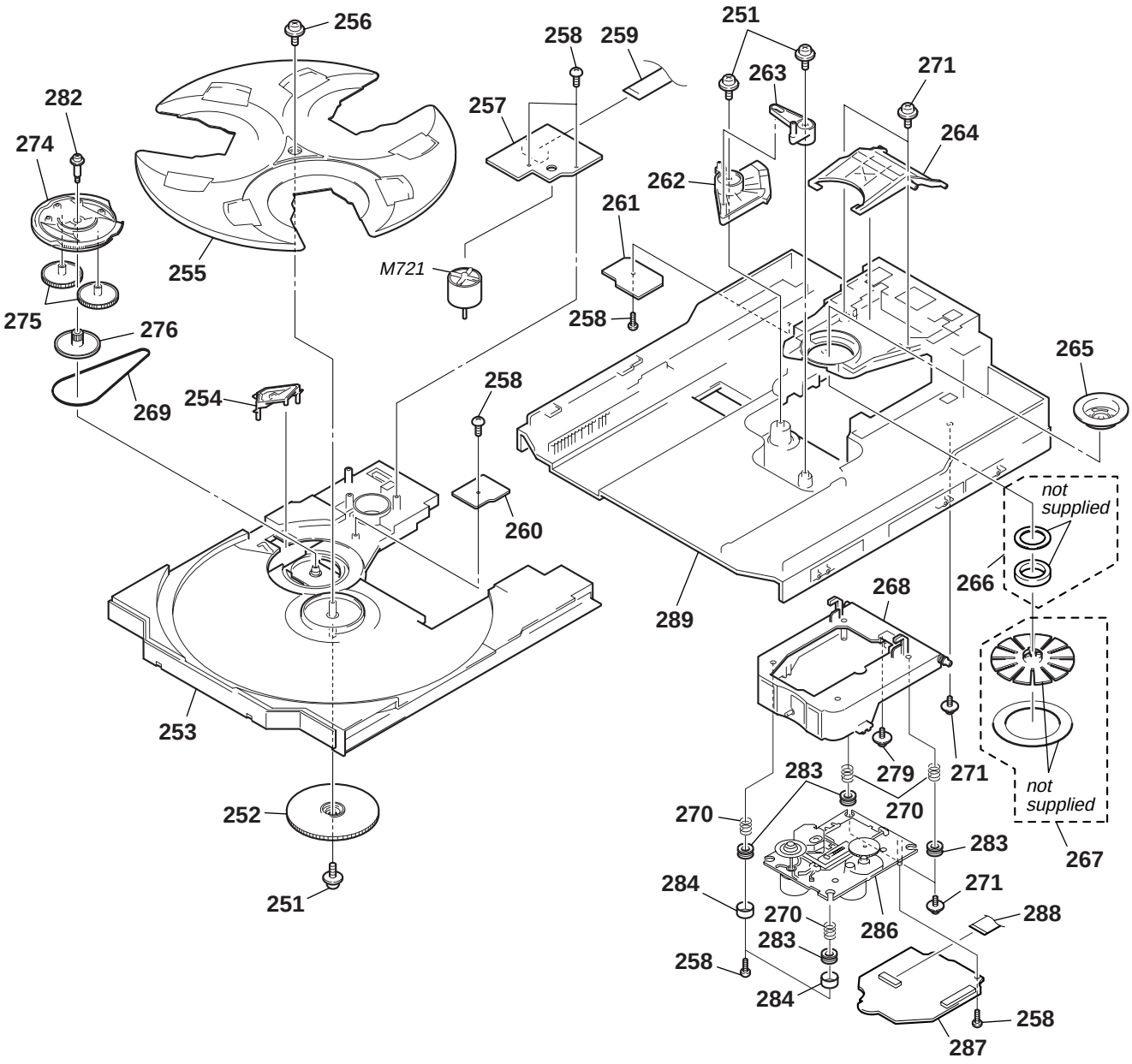


Ref. No.	Part No.	Description	Remark
101	1-773-049-11	WIRE (FLAT TYPE)(17 CORE)	
102	A-4476-781-A	MAIN BOARD, COMPLETE (DX20:EA)	
102	A-4476-783-A	MAIN BOARD, COMPLETE (DX20:SP)	
102	A-4476-788-A	MAIN BOARD, COMPLETE (DX20:E2, E51, AR, MX)	
102	A-4725-723-A	MAIN BOARD, COMPLETE (DX20:KR)	
102	A-4725-986-A	MAIN BOARD, COMPLETE (DX20:TH)	
102	A-4726-039-A	MAIN BOARD, COMPLETE (RG30)	
* 103	4-988-533-01	HOLDER, PWB	
104	1-791-897-12	WIRE (FLAT TYPE) (19 CORE)	
105	A-4476-779-A	POWER AMP BOARD, COMPLETE (DX20:EA, SP)	
105	A-4476-786-A	POWER AMP BOARD, COMPLETE (DX20:E2, E51, AR, MX)	
105	A-4725-719-A	POWER AMP BOARD, COMPLETE (DX20:KR)	
105	A-4725-979-A	POWER AMP BOARD, COMPLETE (DX20:TH)	
105	A-4726-032-A	POWER AMP BOARD, COMPLETE (RG30)	
106	3-703-244-00	BUSHING (FBS001), CORD (DX20:E51, EA, SP, KR, AR/RG30)	
106	3-703-571-11	BUSHING (S) (4516), CORD (DX20:TH)	

Ref. No.	Part No.	Description	Remark
106	4-966-266-01	BUSHING (S) (FBS002), CORD (DX20:E2, MX)	
107	1-681-444-11	TRANS BOARD (DX20)	
107	1-681-442-21	TRANS BOARD (RG30)	
⚠108	1-769-079-21	CORD, POWER (DX20:KR)	
⚠108	1-769-744-81	CORD, POWER (RG30)	
⚠108	1-777-071-81	CORD, POWER (DX20:E51, EA, SP)	
⚠108	1-783-941-22	CORD, POWER (DX20:AR)	
⚠108	1-791-901-11	CORD, POWER (DX20:E2, MX, TH)	
⚠109	1-569-008-21	ADAPTOR, CONVERSION (DX20:E51, EA, SP)	
⚠110	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (RG30:UK)	
⚠T911	1-437-224-11	TRANSFORMER, POWER (DX20)	
⚠T911	1-437-225-11	TRANSFORMER, POWER (RG30)	
#2	7-685-880-09	SCREW +BVTT 4X6 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#5	7-685-872-09	SCREW +BVTT 3X8 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-4. CD MECHANISM DECK SECTION



Ref. No.	Part No.	Description	Remarks
251	4-933-134-11	SCREW (+PTPWH M2.6X8)	
252	4-221-679-01	CAM (RELAY)	
253	4-231-452-01	TABLE (NEW)	
254	4-221-686-01	LEVER (CHANGE)	
255	4-221-676-01	TRAY	
256	4-933-134-51	SCREW (+PTPWH 2.6X8)	
257	1-675-910-14	MOTOR BOARD	
258	4-951-620-01	SCREW (2.6X8), +BVTP	
259	1-791-983-11	WIRE (FLAT TYPE) (8 CORE)	
260	1-675-911-14	ADDRESS SENSOR BOARD	
261	1-675-912-14	DRIVER BOARD	
262	X-4952-608-1	CAM (U/D) ASSY	
263	4-221-681-01	LEVER (EX)	
264	4-221-682-01	LEVER (LIFTER)	
265	4-221-688-01	PULLEY (B), CHUCKING	
266	1-471-035-11	MAGNET ASSY	
267	X-4952-019-1	PULLEY (A) ASSY, CHUCKING	

Ref. No.	Part No.	Description	Remarks
268	X-4951-889-1	HOLDER (BU) ASSY	
269	4-222-095-01	BELT	
270	4-227-045-11	SPRING (INSULATOR), COIL	
271	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
274	4-221-678-01	CAM (CONTROL)	
275	4-221-683-01	GEAR (U)	
276	4-221-685-01	PULLEY (S)	
279	4-227-899-01	SCREW (DIA. 12), FROATING	
282	4-222-097-01	SCREW, STEP	
283	4-227-549-11	INSULATOR	
284	4-231-151-01	STOPPER (BU)	
⚠286	A-4735-357-A	OP BASE ASSY (KSM-213DAP)	
287	A-4724-934-A	BD BOARD, COMPLETE	
288	1-792-024-11	WIRE (FLAT TYPE) (16 CORE)	
289	4-231-176-01	CHASSIS	
289	4-231-176-11	CHASSIS	
M721	A-4672-826-A	MOTOR ASSY (TURN)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µ A..., uPA...: µ PA..., uPB...: µ PB..., uPC...: µ PC..., uPD...: µ PD...
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  EA : Saudi Arabia model
  SP : Singapore model
  TH : Thai model
  KR : Korea model
  MX : Mexican model
  AR : Argentina model
  E51 : Chiri and Peru model

Ref. No.	Part No.	Description			Remarks
	1-675-911-14	ADDRESS SENSOR BOARD			
		**********			
		< IC >			
IC711	8-749-016-76	IC RPI-321			
		< RESISTOR >			
R711	1-247-876-11	CARBON	75K	5%	1/4W
R712	1-249-409-11	CARBON	220	5%	1/4W F
R713	1-249-429-11	CARBON	10K	5%	1/4W
		<SWITCH>			
S711	1-771-821-11	SWITCH, PUSH (1 KEY) (UP DOWN)			
**********					
	A-4724-934-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C110	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-104-665-11	ELECT	100uF	20%	10V
C116	1-104-665-11	ELECT	100uF	20%	10V
C117	1-104-665-11	ELECT	100uF	20%	10V
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C119	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C121	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C122	1-104-665-11	ELECT	100uF	20%	10V
C123	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C124	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C125	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C126	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C127	1-104-665-11	ELECT	100uF	20%	10V
C129	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C130	1-164-346-11	CERAMIC CHIP	1uF		16V
C131	1-126-964-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C133	1-164-346-11	CERAMIC CHIP	1uF		16V
C140	1-164-346-11	CERAMIC CHIP	1uF		16V
C141	1-164-346-11	CERAMIC CHIP	1uF		16V
C143	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C145	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C162	1-104-665-11	ELECT	100uF	20%	10V
C163	1-104-665-11	ELECT	100uF	20%	10V
C165	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C167	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C168	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C171	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C172	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C181	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C182	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
		< CONNECTOR >			
CN101	1-784-741-11	CONNECTOR, FFC 19P			
CN102	1-793-907-11	CONNECTOR, FFC/FPC 16P			
		< FERRITE BEAD >			
FB101	1-469-731-21	INDUCTOR	0UH		
FB103	1-469-731-21	INDUCTOR	0UH		
		< IC >			
IC101	8-752-386-85	IC CXD2587Q			
IC102	8-759-549-28	IC BA5974FP-E2			
IC103	8-752-085-51	IC CXA2568M-T6			
		< TRANSISTOR >			
Q101	8-729-049-31	TRANSISTOR 2SB710A-RTX			
		< RESISTOR >			
R101	1-216-077-00	RES-CHIP	15K	5%	1/10W
R102	1-216-097-11	RES-CHIP	100K	5%	1/10W
R103	1-216-077-00	RES-CHIP	15K	5%	1/10W
R104	1-216-085-00	RES-CHIP	33K	5%	1/10W
R105	1-216-073-00	RES-CHIP	10K	5%	1/10W
R106	1-216-049-11	RES-CHIP	1K	5%	1/10W
R107	1-216-073-00	RES-CHIP	10K	5%	1/10W
R108	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R109	1-216-121-11	RES-CHIP	1M	5%	1/10W
R110	1-216-025-11	RES-CHIP	100	5%	1/10W

BD DRIVER KEY

Ref. No.	Part No.	Description			Remarks
R111	1-216-121-11	RES-CHIP	1M	5%	1/10W
R113	1-216-121-11	RES-CHIP	1M	5%	1/10W
R114	1-216-073-00	RES-CHIP	10K	5%	1/10W
R116	1-216-001-00	METAL CHIP	10	5%	1/10W
R117	1-216-049-11	RES-CHIP	1K	5%	1/10W
R118	1-216-025-11	RES-CHIP	100	5%	1/10W
R119	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R123	1-216-073-00	RES-CHIP	10K	5%	1/10W
R124	1-216-097-11	RES-CHIP	100K	5%	1/10W
R131	1-216-033-00	METAL CHIP	220	5%	1/10W
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R147	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-001-00	METAL CHIP	10	5%	1/10W
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
R171	1-216-078-00	RES-CHIP	16K	5%	1/10W
R172	1-216-073-00	RES-CHIP	10K	5%	1/10W
R173	1-216-077-00	RES-CHIP	15K	5%	1/10W
R181	1-216-078-00	RES-CHIP	16K	5%	1/10W
R182	1-216-073-00	RES-CHIP	10K	5%	1/10W
R183	1-216-077-00	RES-CHIP	15K	5%	1/10W
		< NETWORK >			
RN101	1-233-576-11	RES, CHIP NETWORK 100			
		< SWITCH >			
S101	1-771-853-11	SWITCH, DETECTION (LIMIT IN)			
		< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
	1-675-912-14	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C702	1-126-964-51	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN701	1-785-336-11	PIN, CONNECTOR(LIGHT ANGLE)10P			
CN702	1-785-550-11	CONNECTOR, FFC/FPC 8P			
		< DIODE >			
D701	8-719-983-15	DIODE MTZJ-T-77-3.9A			
		< IC >			
IC701	8-759-598-69	IC BA6956AN			
		< RESISTOR >			
R701	1-249-411-11	CARBON	330	5%	1/4W
R702	1-249-401-11	CARBON	47	5%	1/4W F
**********					
	1-681-447-11	KEY BOARD			
		*********			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D707	8-719-058-04	DIODE SEL5223S-TP15 (REC PAUSE/START)			
D708	8-719-058-04	DIODE SEL5223S-TP15 (ENTER)			
D709	8-719-057-97	DIODE SEL5923A-TP15 (KARAOKE PON)			(DX20)
D710	8-719-057-97	DIODE SEL5923A-TP15 (GROOVE)			
		< TRANSISTOR >			
Q707	8-729-900-80	TRANSISTOR DTC114ES			
Q708	8-729-900-80	TRANSISTOR DTC114ES			
Q709	8-729-900-80	TRANSISTOR DTC114ES (DX20)			
Q710	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R703	1-249-413-11	CARBON	470	5%	1/4W F
R704	1-249-414-11	CARBON	560	5%	1/4W F
R705	1-249-415-11	CARBON	680	5%	1/4W F
R706	1-249-417-11	CARBON	1K	5%	1/4W F
R707	1-249-418-11	CARBON	1.2K	5%	1/4W F
R708	1-249-420-11	CARBON	1.8K	5%	1/4W F
R709	1-249-422-11	CARBON	2.7K	5%	1/4W F
R710	1-247-843-11	CARBON	3.3K	5%	1/4W
R711	1-249-425-11	CARBON	4.7K	5%	1/4W F (DX20)
R713	1-249-410-11	CARBON	270	5%	1/4W F
R714	1-249-411-11	CARBON	330	5%	1/4W
R715	1-249-413-11	CARBON	470	5%	1/4W F
R716	1-249-414-11	CARBON	560	5%	1/4W F
R717	1-249-415-11	CARBON	680	5%	1/4W F
R718	1-249-417-11	CARBON	1K	5%	1/4W F
R719	1-249-418-11	CARBON	1.2K	5%	1/4W F
R720	1-249-420-11	CARBON	1.8K	5%	1/4W F
R721	1-249-422-11	CARBON	2.7K	5%	1/4W F
R726	1-249-410-11	CARBON	270	5%	1/4W F
R727	1-249-411-11	CARBON	330	5%	1/4W
R728	1-249-413-11	CARBON	470	5%	1/4W F
R729	1-249-414-11	CARBON	560	5%	1/4W F
R730	1-249-415-11	CARBON	680	5%	1/4W F
R731	1-249-417-11	CARBON	1K	5%	1/4W F
R732	1-249-418-11	CARBON	1.2K	5%	1/4W F
R733	1-249-420-11	CARBON	1.8K	5%	1/4W F
R734	1-249-422-11	CARBON	2.7K	5%	1/4W F
R735	1-247-843-11	CARBON	3.3K	5%	1/4W
R736	1-249-425-11	CARBON	4.7K	5%	1/4W F
R737	1-249-427-11	CARBON	6.8K	5%	1/4W F
R745	1-249-411-11	CARBON	330	5%	1/4W
R746	1-249-411-11	CARBON	330	5%	1/4W
R797	1-249-411-11	CARBON	330	5%	1/4W (DX20)
R798	1-249-411-11	CARBON	330	5%	1/4W
		< SWITCH >			
S704	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP EX-CHANGE)			
S705	1-762-875-21	SWITCH, KEYBOARD (DISC 1)			
S706	1-762-875-21	SWITCH, KEYBOARD (DISC 2)			
S707	1-762-875-21	SWITCH, KEYBOARD (DISC 3)			
S708	1-762-875-21	SWITCH, KEYBOARD (OPEN/CLOSE ⏏)			
S709	1-762-875-21	SWITCH, KEYBOARD (▲)			
S710	1-762-875-21	SWITCH, KEYBOARD (▼)			
S711	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			

Ref. No.	Part No.	Description	Remarks
S712	1-762-875-21	SWITCH, KEYBOARD (KARAOKE PON) (DX20)	
S713	1-762-875-21	SWITCH, KEYBOARD (◀◀ –)	
S714	1-762-875-21	SWITCH, KEYBOARD (I◀◀)	
S715	1-762-875-21	SWITCH, KEYBOARD (■)	
S716	1-762-875-21	SWITCH, KEYBOARD (◁I▷)	
S717	1-762-875-21	SWITCH, KEYBOARD (❚❚)	
S718	1-762-875-21	SWITCH, KEYBOARD (▶▶I)	
S719	1-762-875-21	SWITCH, KEYBOARD (▶▶ +)	
S720	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)	
S721	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)	
S726	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)	
S727	1-762-875-21	SWITCH, KEYBOARD (SPECTRUM)	
S728	1-762-875-21	SWITCH, KEYBOARD (DIRECTION/EDIT)	
S729	1-762-875-21	SWITCH, KEYBOARD (STEREO/MONO REPEAT)	
S730	1-762-875-21	SWITCH, KEYBOARD (TUNER MEMORY/PLAY MODE)	
S731	1-762-875-21	SWITCH, KEYBOARD (GAME EQ)	
S732	1-762-875-21	SWITCH, KEYBOARD (ENTER)	
S733	1-762-875-21	SWITCH, KEYBOARD (P.FILE)	
S734	1-762-875-21	SWITCH, KEYBOARD (▶)	
S735	1-762-875-21	SWITCH, KEYBOARD (◀)	
S736	1-762-875-21	SWITCH, KEYBOARD (MUSIC EQ)	
S737	1-762-875-21	SWITCH, KEYBOARD (EFFECT ON/OFF)	
S738	1-762-875-21	SWITCH, KEYBOARD (MOVIE EQ)	
**********			
	A-4726-039-A	MAIN BOARD, COMPLETE (RG30)	
	A-4476-781-A	MAIN BOARD, COMPLETE (DX20:EA)	
	A-4476-783-A	MAIN BOARD, COMPLETE (DX20:SP)	
	A-4725-723-A	MAIN BOARD, COMPLETE (DX20:KR)	
	A-4725-986-A	MAIN BOARD, COMPLETE (DX20:TH)	
	A-4476-788-A	MAIN BOARD, COMPLETE (DX20:AR,E2,E51,MX)	
		**********	
	7-685-872-09	SCREW +BVTT 3X8 (S)	

< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C29	1-162-947-11	CERAMIC CHIP	33PF	5%	50V	(RG30)
C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C104	1-126-947-11	ELECT	47uF	20%	16V	
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C106	1-126-933-11	ELECT	100uF	20%	16V	
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C108	1-126-964-11	ELECT	10uF	20%	50V	
C109	1-162-935-11	CERAMIC CHIP	4PF	0.25PF	50V	
C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C112	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C113	1-126-959-11	ELECT	0.47uF	20%	50V	
C114	1-126-947-11	ELECT	47uF	20%	16V	
C115	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C116	1-126-961-11	ELECT	2.2uF	20%	50V	
C117	1-126-947-11	ELECT	47uF	20%	16V	
C118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C119	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C120	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C121	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
C122	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C123	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C124	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C125	1-126-947-11	ELECT	47uF	20%	16V	
C126	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C127	1-126-960-11	ELECT	1uF	20%	50V	
C128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C129	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C130	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C131	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	(RG30)
C131	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	(DX20)
C132	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	(RG30)
C132	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	(DX20)
C133	1-126-957-11	ELECT	0.22uF	20%	50V	
C134	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V	
C135	1-126-963-11	ELECT	4.7uF	20%	50V	
C136	1-126-963-11	ELECT	4.7uF	20%	50V	
C137	1-126-964-11	ELECT	10uF	20%	50V	
C138	1-164-363-11	CERAMIC CHIP	560PF	5%	50V	(RG30)
C139	1-164-471-11	CERAMIC CHIP	680PF	5%	50V	(RG30)
C139	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	(DX20)
C140	1-126-960-11	ELECT	1uF	20%	50V	
C141	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V	
C142	1-164-362-11	CERAMIC CHIP	470PF	5%	50V	(RG30)
C142	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	(DX20)
C143	1-126-965-11	ELECT	22uF	20%	50V	
C144	1-126-947-11	ELECT	47uF	20%	16V	
C171	1-126-947-11	ELECT	47uF	20%	16V	(RG30)
C172	1-164-156-11	CERAMIC CHIP	0.1uF		25V	(RG30)
C173	1-164-363-11	CERAMIC CHIP	560PF	5%	50V	(RG30)
C175	1-164-363-11	CERAMIC CHIP	560PF	5%	50V	(RG30)
C175	1-162-959-11	CERAMIC CHIP	330PF	5%	50V	(RG30)
C176	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(RG30)
C179	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(RG30)
C180	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(RG30)
C181	1-126-961-11	ELECT	2.2uF	20%	50V	(RG30)
C182	1-162-924-11	CERAMIC CHIP	56PF	5%	50V	(RG30)
C183	1-162-924-11	CERAMIC CHIP	56PF	5%	50V	(RG30)
C184	1-126-961-11	ELECT	2.2uF	20%	50V	(RG30)
C186	1-126-964-11	ELECT	10uF	20%	50V	(RG30)
C187	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(RG30)

MAIN

Ref. No.	Part No.	Description			Remarks
C201	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C202	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C203	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C204	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C205	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C206	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C207	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C208	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C209	1-126-947-11	ELECT	47uF	20%	16V
C210	1-126-947-11	ELECT	47uF	20%	16V
C211	1-130-486-00	MYLAR	0.018uF	10%	50V
C212	1-130-486-00	MYLAR	0.018uF	10%	50V
C213	1-126-960-11	ELECT	1uF	20%	50V
C214	1-126-960-11	ELECT	1uF	20%	50V
C215	1-126-961-11	ELECT	2.2uF	20%	50V
C217	1-126-947-11	ELECT	47uF	20%	16V
C218	1-126-947-11	ELECT	47uF	20%	16V
C219	1-126-962-11	ELECT	3.3uF	20%	50V (RG30)
C219	1-126-961-11	ELECT	2.2uF	20%	50V (DX20)
C221	1-126-963-11	ELECT	4.7uF	20%	50V
C222	1-126-962-11	ELECT	3.3uF	20%	50V (RG30)
C222	1-126-963-11	ELECT	4.7uF	20%	50V (DX20)
C223	1-130-487-00	MYLAR	0.022uF	5%	50V
C224	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C225	1-126-962-11	ELECT	3.3uF	20%	50V (RG30)
C225	1-126-963-11	ELECT	4.7uF	20%	50V (DX20)
C226	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (RG30)
C226	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V (DX20)
C227	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C228	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C229	1-104-665-11	ELECT	100uF	20%	10V
C230	1-104-665-11	ELECT	100uF	20%	10V
C231	1-124-252-00	ELECT	0.33uF	20%	50V (RG30)
C231	1-126-959-11	ELECT	0.47uF	20%	50V (DX20)
C232	1-124-252-00	ELECT	0.33uF	20%	50V (RG30)
C232	1-126-959-11	ELECT	0.47uF	20%	50V (DX20)
C233	1-130-491-00	MYLAR	0.047uF	5%	50V
C234	1-130-491-00	MYLAR	0.047uF	5%	50V
C235	1-126-960-11	ELECT	1uF	20%	50V
C235A	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C236	1-126-933-11	ELECT	100uF	20%	16V
C236A	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C237	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C238	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (RG30)
C238	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V (DX20)
C239	1-130-485-00	MYLAR	0.015uF	5%	50V
C240	1-126-947-11	ELECT	47uF	20%	16V
C241	1-130-479-00	MYLAR	0.0047uF	5%	50V
C242	1-130-471-00	MYLAR	0.001uF	5%	50V
C243	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C244	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C245	1-165-128-11	CERAMIC CHIP	0.22uF		16V (DX20)
C246	1-165-128-11	CERAMIC CHIP	0.22uF		16V (DX20)
C256	1-126-960-11	ELECT	1uF	20%	50V
C257	1-126-956-11	ELECT	0.1uF	20%	50V
C265	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C266	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C270	1-126-933-11	ELECT	100uF	20%	16V
C271	1-126-960-11	ELECT	1uF	20%	50V
C272	1-126-960-11	ELECT	1uF	20%	50V
C300	1-136-165-00	FILM	0.1uF	5%	50V
C301	1-126-963-11	ELECT	4.7uF	20%	50V
C302	1-126-963-11	ELECT	4.7uF	20%	50V
C303	1-126-963-11	ELECT	4.7uF	20%	50V
C304	1-126-963-11	ELECT	4.7uF	20%	50V
C307	1-126-963-11	ELECT	4.7uF	20%	50V
C308	1-126-963-11	ELECT	4.7uF	20%	50V
C309	1-126-963-11	ELECT	4.7uF	20%	50V
C310	1-126-963-11	ELECT	4.7uF	20%	50V
C311	1-126-964-11	ELECT	10uF	20%	50V
C312	1-136-165-00	FILM	0.1uF	5%	50V
C313	1-130-491-00	MYLAR	0.047uF	5%	50V
C314	1-126-963-11	ELECT	4.7uF	20%	50V (DX20)
C315	1-126-963-11	ELECT	4.7uF	20%	50V
C317	1-136-169-00	FILM	0.22uF	5%	50V
C318	1-136-169-00	FILM	0.22uF	5%	50V
C319	1-136-169-00	FILM	0.22uF	5%	50V
C320	1-136-169-00	FILM	0.22uF	5%	50V
C321	1-136-171-00	FILM	0.33uF	5%	50V
C322	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C325	1-130-487-00	MYLAR	0.022uF	5%	50V
C326	1-130-487-00	MYLAR	0.022uF	5%	50V
C327	1-130-487-00	MYLAR	0.022uF	5%	50V
C328	1-130-487-00	MYLAR	0.022uF	5%	50V
C333	1-130-475-00	MYLAR	0.0022uF	5%	50V
C334	1-130-475-00	MYLAR	0.0022uF	5%	50V
C337	1-130-491-00	MYLAR	0.047uF	5%	50V
C338	1-130-491-00	MYLAR	0.047uF	5%	50V
C339	1-130-491-00	MYLAR	0.047uF	5%	50V
C340	1-130-491-00	MYLAR	0.047uF	5%	50V
C342	1-136-165-00	FILM	0.1uF	5%	50V
C343	1-136-165-00	FILM	0.1uF	5%	50V
C344	1-126-964-11	ELECT	10uF	20%	50V
C345	1-126-934-11	ELECT	220uF	20%	16V
C346	1-136-170-00	FILM	0.27uF	5%	50V
C347	1-126-964-11	ELECT	10uF	20%	50V
C348	1-126-964-11	ELECT	10uF	20%	50V
C349	1-104-665-11	ELECT	100uF	20%	10V
C350	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C351	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RG30)
C351	1-162-962-11	CERAMIC CHIP	470PF	10%	50V (DX20)
C352	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RG30)

Ref. No.	Part No.	Description			Remarks
C352	1-162-962-11	CERAMIC CHIP	470PF	10%	50V (DX20)
C356	1-126-963-11	ELECT	4.7uF	20%	50V
C360	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C361	1-107-721-11	ELECT	4.7uF	20%	100V
C362	1-107-721-11	ELECT	4.7uF	20%	100V
C363	1-107-717-11	ELECT	47uF	20%	50V
C364	1-109-953-11	ELECT	2.2uF	20%	50V
C371	1-164-156-11	CERAMIC CHIP	0.1uF		25V (RG30)
C372	1-164-156-11	CERAMIC CHIP	0.1uF		25V (RG30)
C373	1-164-156-11	CERAMIC CHIP	0.1uF		25V (RG30)
C374	1-164-156-11	CERAMIC CHIP	0.1uF		25V (RG30)
C375	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C376	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C381	1-104-665-11	ELECT	100uF	20%	10V
C382	1-126-961-11	ELECT	2.2uF	20%	50V
C383	1-126-961-11	ELECT	2.2uF	20%	50V
C601	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C602	1-126-964-11	ELECT	10uF	20%	50V
C603	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C604	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C605	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C606	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C607	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C608	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C610	1-126-964-11	ELECT	10uF	20%	50V
C611	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C612	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C613	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C614	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C644	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C656	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C657	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C658	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C659	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C660	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C661	1-128-551-11	ELECT	22uF	20%	25V (RG30)
C661	1-126-965-11	ELECT	22uF	20%	50V (DX20)
C662	1-136-165-00	FILM	0.1uF	5%	50V
C663	1-136-165-00	FILM	0.1uF	5%	50V
C664	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C665	1-126-916-11	ELECT	1000uF	20%	6.3V
C666	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C671	1-126-916-11	ELECT	1000uF	20%	6.3V
C672	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C673	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C674	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C675	1-126-935-11	ELECT	470uF	20%	10V
C676	1-104-665-11	ELECT	100uF	20%	10V
C677	1-126-935-11	ELECT	470uF	20%	10V
C678	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C679	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C681	1-136-165-00	FILM	0.1uF	5%	50V
C683	1-136-165-00	FILM	0.1uF	5%	50V
C684	1-136-165-00	FILM	0.1uF	5%	50V
C685	1-126-768-11	ELECT	2200uF	20%	16V
C686	1-126-964-11	ELECT	10uF	20%	50V
C687	1-126-916-11	ELECT	1000uF	20%	6.3V
C688	1-126-964-11	ELECT	10uF	20%	50V
C689	1-104-665-11	ELECT	100uF	20%	10V
C690	1-126-964-11	ELECT	10uF	20%	50V
C691	1-126-933-11	ELECT	100uF	20%	16V
C692	1-126-935-11	ELECT	470uF	20%	16V
C693	1-130-483-00	MYLAR	0.01uF	5%	50V
C694	1-130-483-00	MYLAR	0.01uF	5%	50V
C697	1-126-943-11	ELECT	2200uF	20%	25V
C698	1-126-964-11	ELECT	10uF	20%	50V
C699	1-126-935-11	ELECT	470uF	20%	16V
		< FILTER >			
CF101	1-579-185-21	FILTER, CERAMIC (RG30)			
CF101	1-760-023-11	FILTER, CERAMIC (DX20)			
CF102	1-579-185-21	FILTER, CERAMIC (RG30)			
CF102	1-760-023-11	FILTER, CERAMIC (DX20)			
		< CONNECTOR >			
CN2	1-784-778-11	CONNECTOR, FFC 17P			
CN102	1-784-741-11	CONNECTOR, FFC 19P			
* CN203	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CN402	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
CN403	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
CN701	1-793-766-11	CONNECTOR, BOARD TO BOARD 30P			
		< DIODE >			
D101	8-719-914-42	DIODE DA204K			
D104	8-719-978-33	DIODE DTZ-TT11-6.8B			
D107	8-719-988-61	DIODE 1SS355TE-17 (RG30)			
D108	8-719-988-61	DIODE 1SS355TE-17			
D203	8-719-988-61	DIODE 1SS355TE-17			
D204	8-719-988-61	DIODE 1SS355TE-17			
D205	8-719-988-61	DIODE 1SS355TE-17			
D206	8-719-988-61	DIODE 1SS355TE-17			
D207	8-719-988-61	DIODE 1SS355TE-17			
D301	8-719-069-60	DIODE UDZSTE-179.1B			
D302	8-719-988-61	DIODE 1SS355TE-17			
D303	8-719-988-61	DIODE 1SS355TE-17			
D361	8-719-988-61	DIODE 1SS355TE-17			
D372	8-719-988-61	DIODE 1SS355TE-17			
D383	8-719-988-61	DIODE 1SS355TE-17			
D601	8-719-988-61	DIODE 1SS355TE-17			
D602	8-719-988-61	DIODE 1SS355TE-17			
D661	8-719-988-61	DIODE 1SS355TE-17			
D662	8-719-988-61	DIODE 1SS355TE-17			
D663	8-719-988-61	DIODE 1SS355TE-17			
D664	8-719-988-61	DIODE 1SS355TE-17			
D665	8-719-988-61	DIODE 1SS355TE-17			
D666	8-719-988-61	DIODE 1SS355TE-17			
D667	8-719-988-61	DIODE 1SS355TE-17			
D668	8-719-988-61	DIODE 1SS355TE-17			
D669	8-719-988-61	DIODE 1SS355TE-17			
D670	8-719-988-61	DIODE 1SS355TE-17			
D681	8-719-083-89	DIODE 11ES2N-TB5			
D682	8-719-083-89	DIODE 11ES2N-TB5			
D683	8-719-083-89	DIODE 11ES2N-TB5			

MAIN

Ref. No.	Part No.	Description			Remarks
D684	8-719-083-89	DIODE 11ES2N-TB5			
D685	8-719-988-61	DIODE 1SS355TE-17			
D686	8-719-988-61	DIODE 1SS355TE-17			
D687	8-719-083-89	DIODE 11ES2N-TB5			
D688	8-719-083-89	DIODE 11ES2N-TB5			
D689	8-719-083-89	DIODE 11ES2N-TB5			
D690	8-719-083-89	DIODE 11ES2N-TB5			
D691	8-719-083-89	DIODE 11ES2N-TB5			
D692	8-719-083-89	DIODE 11ES2N-TB5			
D693	8-719-083-89	DIODE 11ES2N-TB5			
D694	8-719-083-89	DIODE 11ES2N-TB5			
D695	8-719-083-89	DIODE 11ES2N-TB5			
D696	8-719-988-61	DIODE 1SS355TE-17 (RG30)			
		< TERMINAL >			
* EP1	1-537-738-21	TERMINAL, EARTH			
		< FERRITE BEAD >			
FB1	1-550-907-21	FERRITE 0UH			
FB2	1-550-907-21	FERRITE 0UH			
FB3	1-550-907-21	FERRITE 0UH			
FB4	1-216-864-11	METAL CHIP 0	5%	1/16W	
FB5	1-216-864-11	METAL CHIP 0	5%	1/16W	
FB6	1-216-864-11	METAL CHIP 0	5%	1/16W	
		< FRONT END >			
FE101	1-693-496-11	FRONT END (4 GANG) (RG30)			
FE101	1-693-477-12	FRONT END (3 GANGS) (DX20)			
		< IC >			
IC101	8-759-652-00	IC BA1450			
IC102	8-759-288-54	IC LC72130			
IC103	8-759-541-48	IC BU1924 (RG30)			
IC201	8-759-242-58	IC TA8189N			
IC301	8-759-832-80	IC BH3878KS2			
IC401	6-800-194-01	IC M30622MCA-B23FP			
IC661	8-759-635-63	IC M51943BSL-TP			
IC681	8-759-039-69	IC uPC7805AHF			
IC682	8-759-039-69	IC uPC7805AHF			
IC683	8-759-088-08	IC uPC7812AHF			
IC684	8-759-701-59	IC M5F7809L			
		< IFT >			
IFT101	1-435-295-12	TRANSFORMER, IF			
		< JACK >			
J301	1-793-987-11	JACK, PIN 2P (AUDIO IN)			
JK101	1-694-555-12	TERMINAL BOARD (4P) (DX20)			
JK101	1-694-556-21	TERMINAL BOARD (ANT.PAL) (RG30)			
JK302	1-694-635-12	TERMINAL BOARD (4P) (SPEAKER)			
		< JUMPER RESISTOR >			
JR1	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR4	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR7	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR8	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR10	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR11	1-216-864-11	METAL CHIP 0	5%	1/16W	

Ref. No.	Part No.	Description			Remarks
JR14	1-216-864-11	METAL CHIP 0	5%	1/16W	(DX20)
JR15	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR16	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR17	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR109	1-216-864-11	METAL CHIP 0	5%	1/16W	(DX20)
JR110	1-216-864-11	METAL CHIP 0	5%	1/16W	(RG30)
JR602	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR603	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR606	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR607	1-216-864-11	METAL CHIP 0	5%	1/16W	(DX20)
JR633	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR634	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR635	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR636	1-216-864-11	METAL CHIP 0	5%	1/16W	(RG30)
JR637	1-216-864-11	METAL CHIP 0	5%	1/16W	(RG30)
JR638	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR639	1-216-864-11	METAL CHIP 0	5%	1/16W	(RG30)
JR640	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR641	1-216-864-11	METAL CHIP 0	5%	1/16W	
JR642	1-216-864-11	METAL CHIP 0	5%	1/16W	
		< COIL >			
L107	1-410-387-11	INDUCTOR CHIP 33uH (RG30)			
L107	1-216-864-11	METAL CHIP 0	5%	1/16W	(DX20)
L108	1-410-369-11	INDUCTOR CHIP 1uH (RG30)			
L109	1-410-393-11	INDUCTOR CHIP 100uH (RG30)			
L201	1-437-220-11	TRANSFORMER, BIAS OSCILLATION			
L371	1-420-872-00	COIL, AIR-CORE (RG30)			
L372	1-420-872-00	COIL, AIR-CORE (RG30)			
L671	1-414-189-31	INDUCTOR 100uH			
		< PHOTO INTERRUPTER >			
PH671	8-749-923-04	IC TOTX178A			
		< TRANSISTOR >			
Q101	8-729-922-66	TRANSISTOR 2SC2410SN			
Q102	8-729-422-57	TRANSISTOR UN4111			
Q103	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q104	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q105	8-729-120-28	TRANSISTOR 2SC2412K-T-146-QR (RG30)			
Q210	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q211	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q213	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q214	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q215	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q216	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q217	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q218	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q219	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q220	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q221	8-729-119-78	TRANSISTOR 2SC2785-HFE			

MAIN

Ref. No.	Part No.	Description	Remarks
Q222	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q223	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q224	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q225	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q226	8-729-900-63	TRANSISTOR DTA124ES (DX20)	
Q227	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q228	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q229	8-729-141-30	TRANSISTOR 2SC3623A-LK (DX20)	
Q230	8-729-141-30	TRANSISTOR 2SC3623A-LK (DX20)	
Q301	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q302	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q361	8-729-900-80	TRANSISTOR DTC114ES	
Q362	8-729-900-63	TRANSISTOR DTA124ES	
Q363	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q364	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q365	8-729-900-63	TRANSISTOR DTA124ES	
Q381	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q382	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q383	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q384	8-729-900-80	TRANSISTOR DTC114ES	
Q385	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q386	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q387	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q601	8-729-900-80	TRANSISTOR DTC114ES	
Q602	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q603	8-729-900-80	TRANSISTOR DTC114ES	
Q604	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q605	8-729-900-80	TRANSISTOR DTC114ES	
Q606	8-729-116-57	TRANSISTOR 2SB1068-K	
Q661	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q681	8-729-049-79	TRANSISTOR RT1P137S-TP	
Q682	8-729-900-80	TRANSISTOR DTC114ES	

< RESISTOR >

Ref. No.	Part No.	Description			Remarks
R3	1-216-864-11	METAL CHIP	0	5%	1/16W (DX20)
R4	1-216-864-11	METAL CHIP	0	5%	1/16W (DX20)
R7	1-216-864-11	METAL CHIP	0	5%	1/16W
R101	1-216-805-11	METAL CHIP	47	5%	1/16W
R102	1-216-819-11	METAL CHIP	680	5%	1/16W
R103	1-216-819-11	METAL CHIP	680	5%	1/16W
R104	1-216-811-11	METAL CHIP	150	5%	1/16W
R105	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R106	1-216-819-11	METAL CHIP	680	5%	1/16W (RG30)
R106	1-216-815-11	METAL CHIP	330	5%	1/16W (DX20)
R107	1-216-864-11	METAL CHIP	0	5%	1/16W
R108	1-216-815-11	METAL CHIP	330	5%	1/16W
R109	1-216-805-11	METAL CHIP	47	5%	1/16W
R110	1-216-833-11	METAL CHIP	10K	5%	1/16W
R111	1-216-809-11	METAL CHIP	100	5%	1/16W
R112	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R113	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R114	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R115	1-216-833-11	METAL CHIP	10K	5%	1/16W
R116	1-216-809-11	METAL CHIP	100	5%	1/16W
R117	1-216-845-11	METAL CHIP	100K	5%	1/16W
R118	1-216-809-11	METAL CHIP	100	5%	1/16W
R119	1-216-833-11	METAL CHIP	10K	5%	1/16W
R120	1-216-833-11	METAL CHIP	10K	5%	1/16W
R121	1-216-821-11	METAL CHIP	1K	5%	1/16W
R122	1-216-833-11	METAL CHIP	10K	5%	1/16W
R123	1-216-833-11	METAL CHIP	10K	5%	1/16W
R124	1-216-813-11	METAL CHIP	220	5%	1/16W
R125	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R126	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R127	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R128	1-216-818-11	METAL CHIP	560	5%	1/16W
R129	1-216-818-11	METAL CHIP	560	5%	1/16W
R130	1-216-833-11	METAL CHIP	10K	5%	1/16W
R131	1-216-834-11	METAL CHIP	12K	5%	1/16W
R132	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R133	1-216-814-11	METAL CHIP	270	5%	1/16W (RG30)
R133	1-216-817-11	METAL CHIP	470	5%	1/16W (DX20)
R134	1-216-814-11	METAL CHIP	270	5%	1/16W (RG30)
R134	1-216-817-11	METAL CHIP	470	5%	1/16W (DX20)
R135	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R136	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R137	1-216-809-11	METAL CHIP	100	5%	1/16W
R138	1-216-809-11	METAL CHIP	100	5%	1/16W
R139	1-216-864-11	METAL CHIP	0	5%	1/16W
R171	1-216-809-11	METAL CHIP	100	5%	1/16W (RG30)
R172	1-216-845-11	METAL CHIP	100K	5%	1/16W (RG30)
R174	1-216-821-11	METAL CHIP	1K	5%	1/16W (RG30)
R175	1-216-817-11	METAL CHIP	470	5%	1/16W (RG30)
R177	1-216-809-11	METAL CHIP	100	5%	1/16W (RG30)
R181	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (RG30)
R183	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (RG30)
R201	1-216-797-11	METAL CHIP	10	5%	1/16W
R202	1-216-797-11	METAL CHIP	10	5%	1/16W
R203	1-216-797-11	METAL CHIP	10	5%	1/16W
R204	1-216-797-11	METAL CHIP	10	5%	1/16W
R205	1-216-805-11	METAL CHIP	47	5%	1/16W
R206	1-216-805-11	METAL CHIP	47	5%	1/16W
R207	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R208	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R209	1-216-850-11	METAL CHIP	270K	5%	1/16W
R210	1-216-850-11	METAL CHIP	270K	5%	1/16W
R214	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R215	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R216	1-216-845-11	METAL CHIP	100K	5%	1/16W
R217	1-216-833-11	METAL CHIP	10K	5%	1/16W
R218	1-216-848-11	METAL CHIP	180K	5%	1/16W
R219	1-216-841-11	METAL CHIP	47K	5%	1/16W (RG30)
R219	1-216-833-11	METAL CHIP	10K	5%	1/16W (DX20)
R220	1-216-837-11	METAL CHIP	22K	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remarks
R221	1-216-833-11	METAL CHIP	10K	5%	1/16W
R222	1-216-813-11	METAL CHIP	220	5%	1/16W
R223	1-216-848-11	METAL CHIP	180K	5%	1/16W
R224	1-216-848-11	METAL CHIP	180K	5%	1/16W
R225	1-216-837-11	METAL CHIP	22K	5%	1/16W
R226	1-216-837-11	METAL CHIP	22K	5%	1/16W
R227	1-216-846-11	METAL CHIP	120K	5%	1/16W
R228	1-216-846-11	METAL CHIP	120K	5%	1/16W
R229	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R230	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R231	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R231A	1-216-821-11	METAL CHIP	1K	5%	1/16W
R232	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R232A	1-216-821-11	METAL CHIP	1K	5%	1/16W
R233	1-216-843-11	METAL CHIP	68K	5%	1/16W
R234	1-216-843-11	METAL CHIP	68K	5%	1/16W
R235	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R236	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R237	1-216-833-11	METAL CHIP	10K	5%	1/16W
R238	1-216-855-11	METAL CHIP	680K	5%	1/16W
R239	1-216-833-11	METAL CHIP	10K	5%	1/16W
R240	1-216-833-11	METAL CHIP	10K	5%	1/16W
R241	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R242	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R243	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R244	1-216-838-11	METAL CHIP	27K	5%	1/16W
R245	1-216-833-11	METAL CHIP	10K	5%	1/16W
R246	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R247	1-216-845-11	METAL CHIP	100K	5%	1/16W
R248	1-216-834-11	METAL CHIP	12K	5%	1/16W
R249	1-216-855-11	METAL CHIP	680K	5%	1/16W
R250	1-216-848-11	METAL CHIP	180K	5%	1/16W
R251	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R252	1-216-838-11	METAL CHIP	27K	5%	1/16W
R253	1-216-833-11	METAL CHIP	10K	5%	1/16W
R254	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R255	1-216-821-11	METAL CHIP	1K	5%	1/16W (DX20)
R256	1-216-833-11	METAL CHIP	10K	5%	1/16W
R257	1-216-816-11	METAL CHIP	390	5%	1/16W
R258	1-216-813-11	METAL CHIP	220	5%	1/16W
R259	1-216-821-11	METAL CHIP	1K	5%	1/16W (DX20)
R260	1-216-816-11	METAL CHIP	390	5%	1/16W
R261	1-216-816-11	METAL CHIP	390	5%	1/16W
R262	1-216-845-11	METAL CHIP	100K	5%	1/16W
R263	1-216-833-11	METAL CHIP	10K	5%	1/16W
R264	1-216-833-11	METAL CHIP	10K	5%	1/16W
R270	1-216-813-11	METAL CHIP	220	5%	1/16W
R271	1-216-857-11	METAL CHIP	1M	5%	1/16W
R272	1-216-857-11	METAL CHIP	1M	5%	1/16W
R273	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R274	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R275	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R276	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R277	1-216-845-11	METAL CHIP	100K	5%	1/16W
R278	1-216-845-11	METAL CHIP	100K	5%	1/16W
R301	1-216-833-11	METAL CHIP	10K	5%	1/16W
R302	1-216-833-11	METAL CHIP	10K	5%	1/16W
R303	1-216-838-11	METAL CHIP	27K	5%	1/16W
R304	1-216-838-11	METAL CHIP	27K	5%	1/16W
R305	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R306	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R307	1-216-835-11	METAL CHIP	15K	5%	1/16W
R308	1-216-835-11	METAL CHIP	15K	5%	1/16W
R309	1-216-857-11	METAL CHIP	1M	5%	1/16W
R313	1-216-845-11	METAL CHIP	100K	5%	1/16W
R314	1-216-845-11	METAL CHIP	100K	5%	1/16W
R315	1-216-839-11	METAL CHIP	33K	5%	1/16W
R316	1-216-839-11	METAL CHIP	33K	5%	1/16W
R317	1-216-845-11	METAL CHIP	100K	5%	1/16W
R318	1-216-850-11	METAL CHIP	270K	5%	1/16W
R320	1-216-847-11	METAL CHIP	150K	5%	1/16W
R321	1-216-833-11	METAL CHIP	10K	5%	1/16W
R322	1-216-833-11	METAL CHIP	10K	5%	1/16W
R323	1-216-813-11	METAL CHIP	220	5%	1/16W
R324	1-216-833-11	METAL CHIP	10K	5%	1/16W
R325	1-216-835-11	METAL CHIP	15K	5%	1/16W
R326	1-216-833-11	METAL CHIP	10K	5%	1/16W
R327	1-216-825-11	METAL CHIP	2.2K	5%	1/16W (DX20)
R328	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R329	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R331	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R332	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R333	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R334	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R335	1-216-845-11	METAL CHIP	100K	5%	1/16W
R336	1-216-845-11	METAL CHIP	100K	5%	1/16W
R337	1-216-833-11	METAL CHIP	10K	5%	1/16W
R338	1-216-833-11	METAL CHIP	10K	5%	1/16W
R339	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R340	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R341	1-216-813-11	METAL CHIP	220	5%	1/16W
R342	1-216-813-11	METAL CHIP	220	5%	1/16W
R343	1-216-833-11	METAL CHIP	10K	5%	1/16W (DX20)
R344	1-216-833-11	METAL CHIP	10K	5%	1/16W (DX20)
R361	1-215-891-11	METAL OXIDE	680	5%	2W
R362	1-215-891-11	METAL OXIDE	680	5%	2W
R363	1-216-821-11	METAL CHIP	1K	5%	1/16W
R364	1-216-821-11	METAL CHIP	1K	5%	1/16W
R365	1-216-841-11	METAL CHIP	47K	5%	1/16W
R366	1-216-833-11	METAL CHIP	10K	5%	1/16W
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W
R368	1-216-845-11	METAL CHIP	100K	5%	1/16W
R369	1-216-837-11	METAL CHIP	22K	5%	1/16W
R370	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (RG30)
R370	1-216-823-11	METAL CHIP	1.5K	5%	1/16W (DX20)
R377	1-260-304-51	CARBON	10	5%	1/2W (RG30)
R378	1-260-304-51	CARBON	10	5%	1/2W (RG30)
R379	1-260-304-51	CARBON	10	5%	1/2W (RG30)
R380	1-260-304-51	CARBON	10	5%	1/2W (RG30)
R381	1-216-841-11	METAL CHIP	47K	5%	1/16W (RG30)

Ref. No.	Part No.	Description			Remarks
R381	1-216-842-11	METAL CHIP	56K	5%	1/16W (DX20)
R382	1-216-842-11	METAL CHIP	56K	5%	1/16W (RG30)
R382	1-216-841-11	METAL CHIP	47K	5%	1/16W (DX20)
R383	1-216-833-11	METAL CHIP	10K	5%	1/16W
R384	1-216-833-11	METAL CHIP	10K	5%	1/16W
R385	1-216-839-11	METAL CHIP	33K	5%	1/16W
R386	1-216-837-11	METAL CHIP	22K	5%	1/16W
R387	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R388	1-216-837-11	METAL CHIP	22K	5%	1/16W
R389	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R393	1-216-806-11	RES-CHIP	56	5%	1/16W
R394	1-216-806-11	RES-CHIP	56	5%	1/16W
R601	1-216-821-11	METAL CHIP	1K	5%	1/16W
R602	1-216-819-11	METAL CHIP	680	5%	1/16W
R603	1-216-821-11	METAL CHIP	1K	5%	1/16W
R604	1-216-819-11	METAL CHIP	680	5%	1/16W
R605	1-216-821-11	METAL CHIP	1K	5%	1/16W
R606	1-216-819-11	METAL CHIP	680	5%	1/16W
R607	1-216-809-11	METAL CHIP	100	5%	1/16W
R608	1-216-809-11	METAL CHIP	100	5%	1/16W
R609	1-216-833-11	METAL CHIP	10K	5%	1/16W
R610	1-216-809-11	METAL CHIP	100	5%	1/16W
R611	1-216-833-11	METAL CHIP	10K	5%	1/16W
R612	1-216-809-11	METAL CHIP	100	5%	1/16W
R613	1-216-833-11	METAL CHIP	10K	5%	1/16W
R614	1-216-809-11	METAL CHIP	100	5%	1/16W
R615	1-216-809-11	METAL CHIP	100	5%	1/16W
R616	1-216-809-11	METAL CHIP	100	5%	1/16W
R617	1-216-809-11	METAL CHIP	100	5%	1/16W
R618	1-216-833-11	METAL CHIP	10K	5%	1/16W
R619	1-216-809-11	METAL CHIP	100	5%	1/16W
R620	1-216-813-11	METAL CHIP	220	5%	1/16W
R621	1-216-813-11	METAL CHIP	220	5%	1/16W
R622	1-216-809-11	METAL CHIP	100	5%	1/16W
R623	1-216-809-11	METAL CHIP	100	5%	1/16W
R624	1-216-809-11	METAL CHIP	100	5%	1/16W
R625	1-216-833-11	METAL CHIP	10K	5%	1/16W
R626	1-216-809-11	METAL CHIP	100	5%	1/16W
R627	1-216-809-11	METAL CHIP	100	5%	1/16W
R628	1-216-809-11	METAL CHIP	100	5%	1/16W
R629	1-216-809-11	METAL CHIP	100	5%	1/16W
R630	1-216-809-11	METAL CHIP	100	5%	1/16W
R631	1-216-809-11	METAL CHIP	100	5%	1/16W
R632	1-216-833-11	METAL CHIP	10K	5%	1/16W
R633	1-216-809-11	METAL CHIP	100	5%	1/16W
R634	1-216-833-11	METAL CHIP	10K	5%	1/16W
R635	1-216-809-11	METAL CHIP	100	5%	1/16W
R636	1-216-809-11	METAL CHIP	100	5%	1/16W
R637	1-216-809-11	METAL CHIP	100	5%	1/16W
R638	1-216-864-11	METAL CHIP	0	5%	1/16W
R640	1-216-839-11	METAL CHIP	33K	5%	1/16W (RG30)
R640	1-216-841-11	METAL CHIP	47K	5%	1/16W (DX20)
R641	1-216-841-11	METAL CHIP	47K	5%	1/16W (RG30)
R641	1-216-833-11	METAL CHIP	10K	5%	1/16W (DX20:EA)
R641	1-216-823-11	METAL CHIP	1.5K	5%	1/16W (DX20:KR,SP,TH)
R641	1-216-837-11	METAL CHIP	22K	5%	1/16W (DX20:AR,E2,E51,MX)
R643	1-216-821-11	METAL CHIP	1K	5%	1/16W
R644	1-216-851-11	METAL CHIP	330K	5%	1/16W
R645	1-216-833-11	METAL CHIP	10K	5%	1/16W
R646	1-216-833-11	METAL CHIP	10K	5%	1/16W
R647	1-216-864-11	METAL CHIP	0	5%	1/16W (DX20)
R648	1-216-864-11	METAL CHIP	0	5%	1/16W (DX20)
R649	1-216-833-11	METAL CHIP	10K	5%	1/16W
R650	1-216-833-11	METAL CHIP	10K	5%	1/16W
R655	1-216-864-11	METAL CHIP	0	5%	1/16W
R656	1-216-809-11	METAL CHIP	100	5%	1/16W
R657	1-216-833-11	METAL CHIP	10K	5%	1/16W
R658	1-216-809-11	METAL CHIP	100	5%	1/16W
R659	1-216-833-11	METAL CHIP	10K	5%	1/16W
R660	1-216-809-11	METAL CHIP	100	5%	1/16W
R661	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R662	1-216-821-11	METAL CHIP	1K	5%	1/16W
R663	1-216-841-11	METAL CHIP	47K	5%	1/16W
R664	1-216-841-11	METAL CHIP	47K	5%	1/16W
R665	1-216-833-11	METAL CHIP	10K	5%	1/16W
R670	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R671	1-216-841-11	METAL CHIP	47K	5%	1/16W
R672	1-216-841-11	METAL CHIP	47K	5%	1/16W
R673	1-216-833-11	METAL CHIP	10K	5%	1/16W
R674	1-216-841-11	METAL CHIP	47K	5%	1/16W
R675	1-216-841-11	METAL CHIP	47K	5%	1/16W
R676	1-216-841-11	METAL CHIP	47K	5%	1/16W
R677	1-216-841-11	METAL CHIP	47K	5%	1/16W
R678	1-216-841-11	METAL CHIP	47K	5%	1/16W
R679	1-216-841-11	METAL CHIP	47K	5%	1/16W
R680	1-216-833-11	METAL CHIP	10K	5%	1/16W
R681	1-216-864-11	METAL CHIP	0	5%	1/16W

< COMPOSITION CIRCUIT BLOCK >

RB101	1-234-457-11	ENCAPSULATED COMPONENT

< VARIABLE RESISTOR >

RV101	1-241-765-11	RES, ADJ, CARBON 22K
RV661	1-241-762-11	RES, ADJ, CARBON 2.2K (TAPE SPEED)

< RELAY >

RY371	1-755-373-11	RELAY

< TRANSFORMER >

T101	1-435-195-31	TRANSFORMER, DISCRIMINATOR
T102	1-234-477-11	ENCAPSULATED COMPONENT (RG30)

< VIBRATOR >

X101	1-760-549-31	VIBRATOR, CRYSTAL (4.5MHz)
X102	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (RG30)
X601	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)
X602	1-781-107-21	VIBRATOR, SERAMIC (16MHz)

****

MOTOR **PANEL**

Ref. No.	Part No.	Description			Remarks
	1-675-910-14	MOTOR BOARD			
		**********			
		< CAPACITOR >			
C721	1-162-306-11	CERAMIC	0.01uF	30%	16V
		< CONNECTOR >			
CN721	1-770-516-31	CONNECTOR, FFC 8P			
CN722	1-785-330-11	PIN, CONNECTOR (LIGHT ANGLE)4P			
		< SWITCH >			
S701	1-771-822-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE)			
**********					
	A-4726-035-A	PANEL BOARD, COMPLETE (RG30)			
	A-4476-797-A	PANEL BOARD, COMPLETE (DX20:AR,E2,E51,EA,MX,SP)			
	A-4725-721-A	PANEL BOARD, COMPLETE (DX20:KR)			
	A-4725-982-A	PANEL BOARD, COMPLETE (DX20:TH)			
		**********			
	4-234-016-01	FL HOLDER			
	7-685-872-09	SCREW +BVTT	3X8 (S)		
		< CAPACITOR >			
C701	1-126-966-11	ELECT	33uF	20%	50V
C702	1-126-966-11	ELECT	33uF	20%	50V
C703	1-162-306-11	CERAMIC	0.01uF	30%	16V
C704	1-124-589-11	ELECT	47uF	20%	16V
C705	1-162-294-31	CERAMIC	0.001uF	10%	50V
C706	1-162-282-31	CERAMIC	100PF	10%	50V (RG30)
C706	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20)
C707	1-162-282-31	CERAMIC	100PF	10%	50V (RG30)
C707	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20)
C708	1-162-282-31	CERAMIC	100PF	10%	50V
C709	1-162-282-31	CERAMIC	100PF	10%	50V
C710	1-162-282-31	CERAMIC	100PF	10%	50V
C711	1-162-282-31	CERAMIC	100PF	10%	50V
C712	1-162-282-31	CERAMIC	100PF	10%	50V
C713	1-162-282-31	CERAMIC	100PF	10%	50V
C714	1-162-282-31	CERAMIC	100PF	10%	50V
C715	1-162-282-31	CERAMIC	100PF	10%	50V
C716	1-161-494-00	CERAMIC	0.022uF		25V
C720	1-162-306-11	CERAMIC	0.01uF	30%	16V
C721	1-124-589-11	ELECT	47uF	20%	16V
C722	1-162-282-31	CERAMIC	100PF	10%	50V
C723	1-162-282-31	CERAMIC	100PF	10%	50V
C724	1-162-282-31	CERAMIC	100PF	10%	50V
C725	1-162-282-31	CERAMIC	100PF	10%	50V
C726	1-162-282-31	CERAMIC	100PF	10%	50V
C727	1-162-282-31	CERAMIC	100PF	10%	50V
C728	1-162-282-31	CERAMIC	100PF	10%	50V
C729	1-162-282-31	CERAMIC	100PF	10%	50V
C730	1-162-282-31	CERAMIC	100PF	10%	50V
C731	1-162-282-31	CERAMIC	100PF	10%	50V
C732	1-162-282-31	CERAMIC	100PF	10%	50V
C733	1-162-282-31	CERAMIC	100PF	10%	50V

Ref. No.	Part No.	Description			Remarks
C734	1-162-306-11	CERAMIC	0.01uF	30%	16V
C735	1-162-306-11	CERAMIC	0.01uF	30%	16V
C736	1-162-294-31	CERAMIC	0.001uF	10%	50V
C737	1-162-294-31	CERAMIC	0.001uF	10%	50V
C738	1-104-665-11	ELECT	100uF	20%	10V (DX20)
C739	1-104-665-11	ELECT	100uF	20%	10V (DX20)
C754	1-162-215-31	CERAMIC	47PF	5%	50V (DX20)
C755	1-126-957-11	ELECT	0.22uF	20%	50V (DX20)
C756	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20)
C757	1-162-306-11	CERAMIC	0.01uF	30%	16V (DX20)
C758	1-126-956-91	ELECT	0.1uF	20%	50V (DX20)
C759	1-162-290-31	CERAMIC	470PF	10%	50V (DX20)
C760	1-126-961-11	ELECT	2.2uF	20%	50V (DX20)
C761	1-162-215-31	CERAMIC	47PF	5%	50V (DX20)
C762	1-162-282-31	CERAMIC	100PF	10%	50V (DX20)
C763	1-126-961-11	ELECT	2.2uF	20%	50V (DX20)
C765	1-126-964-11	ELECT	10uF	20%	50V (DX20)
C766	1-126-964-11	ELECT	10uF	20%	50V (DX20)
C770	1-164-159-21	CERAMIC	0.1uF		50V
C775	1-162-306-11	CERAMIC	0.01uF	30%	16V
C777	1-164-159-21	CERAMIC	0.1uF		50V (DX20)
C778	1-164-159-21	CERAMIC	0.1uF		50V
C779	1-164-159-21	CERAMIC	0.1uF		50V
C780	1-164-159-21	CERAMIC	0.1uF		50V (DX20)
		< CONNECTOR >			
CN711	1-793-767-11	CONNECTOR, BOARD TO BOARD 30P			
* CN712	1-564-729-11	PIN, CONNECTOR (SMALL TYPE)13P			(RG30)
CN712	1-785-339-11	PIN, CONNECTOR(LIGHT ANGLE)13P			(DX20)
		< DIODE >			
D701	8-719-071-44	DIODE SELS5223C-TP15 (I/⏻)			
D702	8-719-084-40	DIODE SEL5955A-TP15 (MD(VIDEO))			
D703	8-719-084-40	DIODE SEL5955A-TP15 (TAPE A/B)			
D704	8-719-084-40	DIODE SEL5955A-TP15 (CD)			
D705	8-719-084-40	DIODE SEL5955A-TP15 (TUNER/BAND)			
D706	8-719-084-40	DIODE SEL5955A-TP15 (GAME)			
D713	8-719-991-33	DIODE 1SS133T-77			
D716	8-719-084-40	DIODE SEL5955A-TP15 (MD(VIDEO))			
D717	8-719-084-40	DIODE SEL5955A-TP15 (TAPE A/B)			
D718	8-719-084-40	DIODE SEL5955A-TP15 (CD)			
D719	8-719-084-40	DIODE SEL5955A-TP15 (TUNER/BAND)			
D720	8-719-084-40	DIODE SEL5955A-TP15 (GAME)			
D721	8-719-991-33	DIODE 1SS133T-77			

Ref. No.	Part No.	Description			Remarks
		< FERRITE BEAD >			
FB701	1-412-473-21	INDUCTOR	0UH		
		< FLUORESCENT INDICATOR>			
FLD1	1-518-729-22	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	6-800-220-01	IC uPD780232GC-031-8BT			
IC702	8-759-710-97	IC NJM4565M(TE2) (DX20)			
SEN701	8-759-827-70	IC NJL64H400A-1			
		< JACK >			
J701	1-691-293-21	JACK (PHONES)			
J702	1-815-603-11	JACK (MIC) (DX20)			
J704	1-815-684-11	JACK, PIN 3P (INPUT)			
		< TRANSISTOR >			
Q701	8-729-900-63	TRANSISTOR DTA124ES			
Q702	8-729-900-80	TRANSISTOR DTC114ES			
Q703	8-729-900-80	TRANSISTOR DTC114ES			
Q704	8-729-900-80	TRANSISTOR DTC114ES			
Q705	8-729-900-80	TRANSISTOR DTC114ES			
Q706	8-729-900-80	TRANSISTOR DTC114ES			
Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE (DX20)			
		< RESISTOR >			
R701	1-249-410-11	CARBON	270	5%	1/4W F
R702	1-249-411-11	CARBON	330	5%	1/4W
R722	1-247-843-11	CARBON	3.3K	5%	1/4W
R723	1-249-425-11	CARBON	4.7K	5%	1/4W F
R724	1-249-427-11	CARBON	6.8K	5%	1/4W F
R725	1-249-429-11	CARBON	10K	5%	1/4W
R738	1-249-417-11	CARBON	1K	5%	1/4W F (RG30)
R738	1-249-421-11	CARBON	2.2K	5%	1/4W F (DX20)
R740	1-249-404-00	CARBON	82	5%	1/4W F
R741	1-249-429-11	CARBON	10K	5%	1/4W
R742	1-249-429-11	CARBON	10K	5%	1/4W
R743	1-249-434-11	CARBON	27K	5%	1/4W
R744	1-249-434-11	CARBON	27K	5%	1/4W
R747	1-249-429-11	CARBON	10K	5%	1/4W
R748	1-249-429-11	CARBON	10K	5%	1/4W
R749	1-249-429-11	CARBON	10K	5%	1/4W
R750	1-249-429-11	CARBON	10K	5%	1/4W
R752	1-249-429-11	CARBON	10K	5%	1/4W
R753	1-249-429-11	CARBON	10K	5%	1/4W
R755	1-249-429-11	CARBON	10K	5%	1/4W
R756	1-247-807-31	CARBON	100	5%	1/4W
R757	1-249-429-11	CARBON	10K	5%	1/4W
R758	1-247-807-31	CARBON	100	5%	1/4W
R759	1-249-429-11	CARBON	10K	5%	1/4W
R760	1-247-807-31	CARBON	100	5%	1/4W
R761	1-249-429-11	CARBON	10K	5%	1/4W
R762	1-247-807-31	CARBON	100	5%	1/4W
R763	1-249-429-11	CARBON	10K	5%	1/4W
R764	1-249-429-11	CARBON	10K	5%	1/4W
R765	1-247-903-00	CARBON	1M	5%	1/4W
R768	1-247-807-31	CARBON	100	5%	1/4W
R769	1-249-401-11	CARBON	47	5%	1/4W F
R770	1-249-417-11	CARBON	1K	5%	1/4W F (DX20)
R771	1-249-430-11	CARBON	12K	5%	1/4W (DX20)
R772	1-249-429-11	CARBON	10K	5%	1/4W (DX20)
R783	1-249-417-11	CARBON	1K	5%	1/4W F (DX20)
R784	1-249-441-11	CARBON	100K	5%	1/4W (DX20)
R785	1-249-429-11	CARBON	10K	5%	1/4W (DX20)
R786	1-249-417-11	CARBON	1K	5%	1/4W F (DX20)
R787	1-249-433-11	CARBON	22K	5%	1/4W (DX20)
R788	1-247-807-31	CARBON	100	5%	1/4W (DX20)
R789	1-249-429-11	CARBON	10K	5%	1/4W (DX20)
R790	1-247-885-00	CARBON	180K	5%	1/4W (DX20)
R791	1-247-807-31	CARBON	100	5%	1/4W (DX20)
R792	1-249-441-11	CARBON	100K	5%	1/4W (DX20)
R796	1-249-401-11	CARBON	47	5%	1/4W F
R805	1-247-807-31	CARBON	100	5%	1/4W
R806	1-249-403-11	CARBON	68	5%	1/4W F
		< VIBRATOR >			
RES701	1-795-058-21	VIBRATOR, CERAMIC (5MHz)			
		< SWITCH >			
S701	1-762-875-21	SWITCH, KEYBOARD (I/⏻)			
S702	1-762-875-21	SWITCH, KEYBOARD (GAME)			
S722	1-762-875-21	SWITCH, KEYBOARD (MD(VIDEO))			
S723	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)			
S724	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
S725	1-762-875-21	SWITCH, KEYBOARD (CD)			
		< VARIABLE RESISTOR >			
VR701	1-418-725-11	ENCODER, ROTARY (12 TYPE) (VOLUME)			
VR703	1-225-739-11	RES, VAR CARBON 50K (MIC LEVEL)(DX20)			
**********					
	A-4726-032-A	POWER AMP BOARD, COMPLETE (RG30)			
	A-4476-786-A	POWER AMP BOARD, COMPLETE (DX20:AR,E2,E51,MX)			
	A-4476-779-A	POWER AMP BOARD, COMPLETE (DX20:EA,SP)			
	A-4725-719-A	POWER AMP BOARD, COMPLETE (DX20:KR)			
	A-4725-979-A	POWER AMP BOARD, COMPLETE (DX20:TH)			
		**********			
		< CAPACITOR >			
C501	1-126-964-11	ELECT	10uF	20%	50V
C502	1-162-290-31	CERAMIC	470PF	10%	50V (RG30)
C502	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20)
C503	1-162-282-31	CERAMIC	100PF	10%	50V
C504	1-128-551-11	ELECT	22uF	20%	25V

POWER AMP | SUB TRANS

Ref. No.	Part No.	Description			Remarks
C507	1-130-493-00	MYLAR	0.068uF	5%	50V
C508	1-130-493-00	MYLAR	0.068uF	5%	50V
C509	1-126-965-11	ELECT	22uF	20%	50V
C511	1-162-306-11	CERAMIC	0.01uF	30%	16V
C512	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20:KR/RG30)
C513	1-164-159-21	CERAMIC	0.1uF		50V (RG30)
C513	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20:KR)
C541	1-130-777-00	MYLAR	0.1uF	10%	100V
C542	1-135-832-21	ELECT	2200uF	20%	50V
C543	1-164-159-21	CERAMIC	0.1uF		50V
C544	1-126-942-61	ELECT	1000uF	20%	25V
C545	1-128-549-11	ELECT	3300uF	20%	35V
C551	1-126-964-11	ELECT	10uF	20%	50V
C552	1-162-290-31	CERAMIC	470PF	10%	50V (RG30)
C552	1-162-294-31	CERAMIC	0.001uF	10%	50V (DX20)
C553	1-162-282-31	CERAMIC	100PF	10%	50V
C554	1-128-551-11	ELECT	22uF	20%	25V
C557	1-130-493-00	MYLAR	0.068uF	5%	50V
C558	1-130-493-00	MYLAR	0.068uF	5%	50V
C559	1-126-965-11	ELECT	22uF	20%	50V
C591	1-130-777-00	MYLAR	0.1uF	10%	100V
C592	1-135-832-21	ELECT	2200uF	20%	50V
		< CONNECTOR >			
CN502	1-778-981-21	CONNECTOR, BOARD TO BOARD 13P			
CN503	1-778-981-21	CONNECTOR, BOARD TO BOARD 13P			
		< DIODE >			
D501	8-719-991-33	DIODE 1SS133T-77			
D502	8-719-991-33	DIODE 1SS133T-77			
D541	8-719-510-68	DIODE D5SBA204101			
D542	8-719-200-82	DIODE 11ES2			
D543	8-719-200-82	DIODE 11ES2			
D551	8-719-991-33	DIODE 1SS133T-77			
		< TERMINAL >			
* EP501	1-537-738-21	TERMINAL, EARTH (DX20:KR/RG30)			
* EP502	1-537-738-21	TERMINAL, EARTH			
		<IC >			
IC501	8-749-016-93	IC STK402-070S			
		< TRANSISTOR >			
Q501	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q503	8-729-140-82	TRANSISTOR 2SA988-PAFAEA			
Q504	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q551	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q581	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
		< RESISTOR >			
R501	1-249-417-11	CARBON	1K	5%	1/4W F
R502	1-249-438-11	CARBON	56K	5%	1/4W
R503	1-249-415-11	CARBON	680	5%	1/4W F (RG30)
R503	1-249-418-11	CARBON	1.2K	5%	1/4W F (DX20)
R504	1-249-435-11	CARBON	33K	5%	1/4W (RG30)
R504	1-249-438-11	CARBON	56K	5%	1/4W (DX20)
R505	1-249-417-11	CARBON	1K	5%	1/4W F
R506	1-249-431-11	CARBON	15K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W
⚠R508	1-217-151-00	METAL	0.22	10%	2W
R509	1-260-076-11	CARBON	10	5%	1/2W
⚠R510	1-217-151-00	METAL	0.22	10%	2W
⚠R511	1-212-881-11	FUSIBLE	100	5%	1/4W
⚠R512	1-202-972-61	FUSIBLE	1	5%	1/4W
R513	1-249-433-11	CARBON	22K	5%	1/4W (DX20)
R514	1-249-421-11	CARBON	2.2K	5%	1/4W F
R515	1-249-433-11	CARBON	22K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-421-11	CARBON	2.2K	5%	1/4W F
R518	1-249-429-11	CARBON	10K	5%	1/4W
R519	1-249-433-11	CARBON	22K	5%	1/4W (DX20)
R541	1-260-115-11	CARBON	22K	5%	1/2W
R551	1-249-417-11	CARBON	1K	5%	1/4W F
R552	1-249-438-11	CARBON	56K	5%	1/4W
R553	1-249-415-11	CARBON	680	5%	1/4W F (RG30)
R553	1-249-418-11	CARBON	1.2K	5%	1/4W F (DX20)
R554	1-249-435-11	CARBON	33K	5%	1/4W (RG30)
R554	1-249-438-11	CARBON	56K	5%	1/4W (DX20)
R555	1-249-417-11	CARBON	1K	5%	1/4W F
R556	1-249-431-11	CARBON	15K	5%	1/4W
R557	1-249-441-11	CARBON	100K	5%	1/4W
⚠R558	1-217-151-00	METAL	0.22	10%	2W
R559	1-260-076-11	CARBON	10	5%	1/2W
⚠R560	1-217-151-00	METAL	0.22	10%	2W
⚠R561	1-212-881-11	FUSIBLE	100	5%	1/4W
R581	1-249-435-11	CARBON	33K	5%	1/4W
R582	1-249-435-11	CARBON	33K	5%	1/4W
R591	1-260-115-11	CARBON	22K	5%	1/2W
**********					
	1-681-445-11	SUB TRANS BOARD (DX20)			
	1-681-445-21	SUB TRANS BOARD (RG30)			
		**********			
		< CAPACITOR >			
C901	1-113-925-11	CERAMIC	0.01uF	20%	250V
C902	1-126-768-11	ELECT	2200uF	20%	16V
C903	1-126-933-11	ELECT	100uF	20%	16V
		< CONNECTOR >			
* CN2	1-564-321-21	PIN, CONNECTOR 2P (DX20:KR,MX,TH/RG30)			
CN2	1-568-106-11	PIN, CONNECTOR 4P (DX20:AR,E2,E51,EA,SP)			
CN901	1-564-321-00	PIN, CONNECTOR 2P			
* CN903	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P (RG30)			
CN903	1-785-315-11	PIN, CONNECTOR (STRAIGHT) 3P (DX20)			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D901	8-719-991-33	DIODE 1SS133T-77			
D902	8-719-200-82	DIODE 11ES2			
D903	8-719-200-82	DIODE 11ES2			
D904	8-719-200-82	DIODE 11ES2			
D905	8-719-200-82	DIODE 11ES2			
		< IC >			
IC901	8-759-158-62	IC TA78057S			
		< TRANSISTOR >			
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		< RESISTOR >			
R902	1-249-429-11	CARBON	10K	5%	1/4W
		< RELAY >			
RY901	1-755-276-11	RELAY, POWER			
		< TRANSFORMER >			
⚠T901	1-435-824-21	TRANSFORMER, POWER (RG30)			
⚠T901	1-435-828-11	TRANSFORMER, POWER (DX20)			
**********					
	1-681-444-11	TRANS BOARD (DX20)			
	1-681-444-21	TRANS BOARD (RG30)			
		**********			
	1-533-217-31	HOLDER, FUSE			
		< CAPACITOR >			
C911	1-128-553-11	ELECT	220uF	20%	63V
C912	1-126-964-11	ELECT	10uF	20%	50V
C913	1-126-968-11	ELECT	100uF	20%	50V
C915	1-164-159-21	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN915	1-564-528-11	PLUG, CONNECTOR 13P			
		< DIODE >			
D911	8-719-200-82	DIODE 11ES2			
D912	8-719-982-20	DIODE MTZJ-30B			
D913	8-719-109-89	DIODE RD5.6ESB2			
		< FUSE >			
⚠F914	1-533-473-11	FUSE, GLASS TUBE (DIA.5) T6.3AL/250V			
⚠F919	1-533-471-11	FUSE, GLASS TUBE (DIA.5) T4AL/250V (DX20:AR,E2,E51,EA,SP)			
⚠F920	1-533-473-11	FUSE, GLASS TUBE (DIA.5) T6.3AL/250V			
		< TRANSISTOR >			
Q911	8-729-048-52	TRANSISTOR 2SA1932(TP)			
		< SESISTOR >			
R905	1-249-429-11	CARBON	10K	5%	1/4W
⚠R911	1-217-637-00	FUSIBLE	1	5%	1/4W
R912	1-249-417-11	CARBON	1K	5%	1/4W F
R913	1-249-429-11	CARBON	10K	5%	1/4W
R915	1-247-807-31	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description			Remarks
R916	1-247-807-31	CARBON	100	5%	1/4W
⚠R919	1-219-122-91	FUSIBLE	0.33	5%	1/4W
⚠R920	1-219-122-91	FUSIBLE	0.33	5%	1/4W
		< SWITCH >			
⚠S901	1-786-055-21	SELECTOR, VOLTAGE (DX20:AR,E2,E51,EA,SP)			
		< TRANSFORMER >			
⚠T911	1-437-224-11	TRANSFORMER, POWER (DX20)			
⚠T911	1-437-225-11	TRANSFORMER, POWER (RG30)			
**********					
	1-681-441-11	VIDEO OUT BOARD (DX20)			
	1-681-441-21	VIDEO OUT BOARD (RG30)			
		**********			
		< CONNECTOR >			
CN714	1-564-505-11	PLUG, CONNECTOR 2P			
		< JACK >			
J705	1-774-227-11	JACK, PIN 1P (VIDEO OUT)			
**********					
		MISCELLANEOUS			
		**********			
70	1-796-123-11	DECK, MECH			
101	1-773-049-11	WIRE (FLAT TYPE)(17 CORE)			
104	1-791-897-12	WIRE (FLAT TYPE)(19 CORE)			
⚠108	1-769-079-21	CORD, POWER (DX20:KR)			
⚠108	1-769-744-81	CORD, POWER (RG30)			
⚠108	1-777-071-81	CORD, POWER (DX20:E51, EA, SP)			
⚠108	1-783-941-22	CORD, POWER (DX20:EA)			
⚠108	1-791-901-11	CORD, POWER (DX20:E2, MX, TH)			
⚠109	1-569-008-21	ADAPTOR, CONVERSION (DX20:E51, EA, SP)			
110	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (RG30:UK)			
259	1-791-983-11	WIRE (FLAT TYPE)(8 CORE)			
⚠286	A-4735-357-A	OP BASE ASSY (KSM-213DAP)			
288	1-792-024-11	WIRE (FLAT TYPE)(16 CORE)			
M721	A-4672-826-A	MOTOR ASSY (TURN)			
FLD1	1-518-729-11	INDICATOR TUBE, FLUORESCENT			
⚠T911	1-437-224-11	TRANSFORMER, POWER (DX20)			
⚠T911	1-437-225-11	TRANSFORMER, POWER (RG30)			
**********					
		**********			
		HARDWARE LIST			
		**********			
#1	7-685-871-01	SCREW +BVTT 3X6 (S)			
#2	7-685-880-09	SCREW +BVTT 4X6 (S)			
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S			
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3			
#5	7-685-872-09	SCREW +BVTT 3X8 (S)			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.06	New
1.1	2002.05	Correction of exploded views (Ref. No.105 replaced with No.107 in the figure mutually). (SPM-02028)
1.2	2003.01	Change of the supply classification of the chassis (Ref. No. 289). Note addition for chassis exchange. (SPM-02119)
1.3	2003.12	Part No. correction of Ref. No. 286 for exploded views. (SPM-03061)